

AN  
INAUGURAL DISSERTATION

ON  
*Pneumonitis*

*Including its three Semiological aspects*

SUBMITTED TO THE  
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185

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Pneumonitis, I conceive to be inflammation of the mucous membrane lining the air-cells, and not of the entire substance of the lungs, as some assert, which consists of a series of lobules held together by inter-lobular tissue, and then of innumerable air-cells, extremely minute in size, and of very delicate texture, placed in close proximity with each other, and connected together by inter-vesicular tissue, and this congeries, or bundle of cells enveloped by a web or map of minute blood-vessels, consisting of the ultimate ramifications of the Pulmonary Arteries or Capillaries, besides which, are nervous structures and an extreme bronchiole entering into the composition of each lobule, which when taken in the aggregate constitute the Pulmonary substance or parenchyma of the lungs, All of which I do not believe is involved in the inflammatory process of

Inflam<sup>n</sup> in propria. But as before remarked, believe that the element or structure implicated is the Mucous Membrane.

And that it should be, to me is perfect<sup>ly</sup> obvious, since the exciting Cause, or agent employed in its production, whether it be Atmospheric air at too high or too low a degree of temperature, or foreign Matter introduced into the system from without, passing over the pulmonary track, and being brought into direct Contact with a texture of such extreme delicacy, and so prone to inflammation when exposed to inappropriate stimuli.

I say, that to me, the reason is plausible why the inflammation should seat itself upon this element, in preference to those which are adjacent to it. And can see no Cause, why it should not, and does not confine

itself to this Membrane, in simple, uncomplicated Cases of Pneumonia p<sup>r</sup>es-<sup>en</sup>t.

The Causes, of Pneumonia are Atmospheric exposures, Cold and moisture combined. I consider one of the most frequently exciting Causes, also a sudden transition from a Cold to a warm medium or vice versa.

Of the predisposing Causes, there is no one which, I conceive more efficient in its production than the Circumstance of an individual's having had a previous attack. Bronchitis may act as a predisposing Cause, the inflammation by the principle of continuation, conveying itself from the larger to the smaller bronchi, and from thence to the air-vesicles

Consumption, and other debilitating diseases, are by some, supposed to predispose to the disorder.

I feel unwilling however to subscribe to the

doctrine that debility or debilitating diseases exert any such influence, As in such states of the system, the individual is anemic, consequently the system, is poorly prepared for establishing the process of Congestion and irritation, which are the precursors of inflammation.

Typhoid fever, seems to have a predilection for those, who have once fallen victims to its ravages, and its affinity to increase in an exact ratio to their number of attacks, there being instances recorded of persons having been attacked as often as twelve and fifteen times.

The disease may be very properly divided into three stages, 1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>d</sup>. of which I shall notice in numerical order.

The first stage, or that of engorgement, is preceded by rigors, or a chill and then fever,

during which time, if there be no pleuritic  
 stick in the side, he lies upon his back  
 seems <sup>anxious</sup> about breathing, is desirous of having the  
 door or window opened, and if a current of  
 cold air strike upon him, is not apt to  
 treat it with that repugnance, which  
 he would be likely to do, whilst labouring  
 under ordinary fevers.

During the first stage, or that of engorgement  
 of the air-cells, which in their normal  
 condition, are filled with air, and subservi-  
 ent to the functions of respiration, are on  
 ly partly filled, in consequence of an extra-  
 vasation of the watery portions of the blood,  
 which have escaped from the minute  
 vessels surrounding them, into their cavities.  
 During this period of the affection, Auscultation  
 is of great value, If the ear or stetho-  
 scope be applied to that portion of the Chest

Containing the engorged lung, we have instead of the vesicular murmur of health, the crepitant rousers, a sound, compared by some to the bursting or explosion of the particles of salt when sprinkled upon fire-coals, by others to the noise which results, by rubbing between the thumb and finger, a lock of hair, etc. But of all the asserted resemblances, there is no one which I like so well, as that given, by my honourable and respected teacher viz J. Bowling, which is produced by the air being sent forcibly through the Bronchial tubes, into the air-cells partly filled with fluid and bursting with a peculiar cracking sound and as the cells are innumerable into which the air passes, the constant bursting or explosion of its particles, will suffice for the rousers characteristic of this stage, and indeed whittle the source from whence it emanates.

At this period, the lung is more friable, and easily torn by the point of the finger, or handle of the scalpel than normally, and an incision into its substance, is followed by the escape, of a reddish and somewhat frothy serum, its edges presenting a red appearance.

In the second degree, which is denominated Hepitization from its consistency, and resemblance to the liver, We have quite a different state of affairs, where in the first stage, we had the vesicular murmur, we now have no sound, the air-cells from whence proceeded the shewers characteristic of that stage, are completely closed in consequence of the fibrinous exudation obliterating their cavities.

If over the lung thus diseased, Percussion be practised, instead of the Crepitating sound



we have revealed the tubal or bronchial respiration, a kind of a whiffing sound, produced by the passage of air, through the bronchial tubes.

The voice is also modified, if the patient speaks thro' the voice articulates itself into the ear or stethoscope, as though it came directly from the chest, produced by the non-permeability of the air-veicles, the tubes through which the air passes, terminating abruptly in the condensed tissue, which is a good conductor of sound.

The sp. gravity of the lung is increased, is heavier than water, consequently sinks when placed within it, its surface presents a deep-red appearance, and from an incision made into its substance escapes a fluid without bubbles of air, and less in quantity than in the first stage,

its edges presenting the appearance of a number of small eminences, which are the air-cells transformed into rounded and somewhat flattened

ened bodies, formed by the thickening of their sides and filling up of their Cavities.

The third, and last stage, is that of Purulent infiltration or Grey-Softening, during which Auscultation and Percussion are of no avail.

The lung at this period, as its appellation denotes is in a state of suppuration, the pus is generally diffused through-out its substance, seldom being confined within narrow limits in the form of an Abscess.

Symptoms, then will vary with the stages of the disease and its aspects. Those of the first stage of Pneumonia *pus-ae*, are fever, with more or less pain in some part of the Chest, Dyspnoea, expectoration of a rust-colour accompanied in some instances by a dry hard cough, with a pulse generally about 100 per minute, the Crepitation rhoncus with slight dulness on Percussion over the engorged lung, and a peculiar pungent heat of the

surface, which is generally present. And one of the most conclusive in a diagnostic point of view. In the second stage, the pain is less acute the dyspnoea generally diminished, the expectoration of a viscid and extremely tenacious nature, the crepitant rhoncus subverted, and in its stead tubal respiration and bronchophony. And the dullness of sound elicited on percussion intensified, by the complete obliteration of the air-cells. The pulse fuller and more accelerated.

In the last stage or that of suppuration, there is a gurgling sound, in some instances, produced by air and fluid finding their way into a vacancy, caused by the breaking down and expectoration of a portion of the lungs. The pulse is weaker and more frequent than in the preceding stages, the expectoration is of a dirty colour, resembling both in hue and consistency plum juice, or a decoction of prunes.

78

The symptoms, which would arise, in addition to those which I have enumerated, in either the Billious or Typhoid aspects of Pneumonia, are such as might arise on the one hand, in the systems of those pursuing a Billious diet here, or, in whom Billious disease and Pneumonia Coexist, Or on the other, such as might originate, in those individuals, in whom the disease is developed whilst labouring under Typhoid affections, or in whom the disorder assumes a Typhoid type.

The duration of Pneumonia is about ten days, in some instances running its course in a shorter space of time, whilst in others a much longer period is required, it may exist in its three stages, at the same time, in the same lung.

Of the two lungs the right, is said to be the one most frequently affected, and the inferior

lobes, more frequently than the superior.  
 Of its complications, Pleurisy and Bronchitis  
 are the most frequent. Pneumonia isolated  
 and independent of Pleuritis I conceive to be of  
 extremely rare occurrence.

Diagnosis, this is plain, and easily formed  
 in the Majority of Cases.

Prognosis, in ordinary Cases the prognosis may  
 be considered favourable, but should excessive  
 dyspnoea occur in Connection with a small  
 frequent pulse, we may argue unfavourably,  
 or should delirium arise, in consequence of the  
 poisonous influence exerted upon the brain, by  
 the imperfect Arterialization of the vital fluid  
 we may consider it an unfavourable omen.

Treatment, this will be modified by a variety  
 of Circumstances, will vary in the different  
 stages, of the same form of the disease, as well  
 as in its various aspects or phases.

That of Pneumonia per-n., is in the first place  
 Venesection, which should be practised at as ea-  
 rly a period as possible, and which will be  
 likely to prove effectual, just in proportion  
 as it is early resorted to,

The number of times it should be employ-  
 ed, and the amount abstracted, will be gover-  
 ned by Circumstances. One Copious bleeding  
 in the outset, will accomplish more, than  
 many smaller ones repeated,

For as the disease is a descriptive one, seated  
 upon a vital organ, what is done, should be  
 done quickly, and in the outset, however, if there  
 were no abatement of the symptoms, the disease  
 persisting in its violence, I should not he-  
 sitate using my lancet a second time an-  
 I even oftner, were it not contraindicated  
 by existing circumstances.

The quantity taken should depend upon

16  
the constitution of the patient, and the violence of the attack,

I should not like to take the buffy coat of the blood, as a criterion by which to be governed in its abstraction, or syncope as a rule to go by, But would place my patient in the semi-recumbent posture, make an orifice in the Median-Cephalic of the arm, and let the blood flow freely until something happened, indicating an impression made upon the system.

The local abstraction of blood by the application of leeches or cups, may be employed in conjunction with the lancet, and is particularly applicable, in those cases where from debility or other causes general blood-letting is not advisable.

Next in importance to venesection is Fasting Antimony, which may be given alone, or in conjunction with minute doses of Coloured, or to the two articles mentioned, in the proportions of 1 gr. each may

be added 10 grs. of Tonic Digitalis, an excellent combination. Purgatives in this stage prove efficacious by virtue of their Counter-irritant effects.

The Tincture of Veratrum Viride, I know from experience, to be of great value, at this period, by its controlling action over the heart and arteries.

Expectorants, are certainly of no value in this stage, there being no indications to be fulfilled by them.

Venesection, although not of the first importance in the second stage, is of value, and should be practiced, it proves beneficial by relieving the tension in the first stage if not that in the second.

Expectorants, are of great moment, and should be employed stimulating or otherwise as the nature of the case requires.

Blisters, I deem of great value in this stage.

In the last stage, or that of Suppuration



I conceive that remedies are of little or no avail however, had I a case of the kind, I should rely principally upon Expectorants, Stimulants and Blisters.

In the treatment of Billious Pneumonia produced by the Malarial impreg, the pneumonia may be cut-short, by the arrest of the Chills which precedes it, by a large dose Quinine, if however the disease continues, after the arrest of the Chills, the same treatment which I mentioned as being applicable in pneumonia <sup>per se</sup> will apply here.

In the treatment of the Typhoid aspect, the practitioner should keep in view the condition of the system, and adapt his remedies accordingly, blood-letting, if employed at all, should be taken in small quantities.

Stimulating expectorants, Blisters, and nourishing diet, will contribute largely to Convalescence in this form of Pneumonia