

YOUNG (D. W.)

BLOODLETTING

NOT NECESSARY

IN THE

Treatment of Pneumonia.

By D. W. YOUNG, M.D.,
AURORA, ILL.

A CONTRIBUTION TO THE REPORT ON
PRACTICAL MEDICINE.

[Read before the Illinois State Medical Society.]

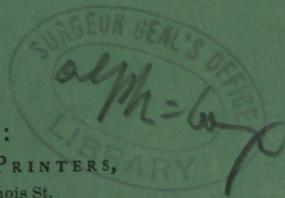
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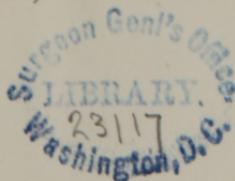
IN THE

TREATMENT OF PNEUMONIA.

BY D. W. YOUNG, M.D., of Aurora, Ill.

[A Contribution to the Report on Practical Medicine. Read before the Illinois State Medical Society, May, 1870.]

THERE are few things more interesting to those who feel pleasure in watching the extraordinary advancement of knowledge, at the present time, than the very rapid progress of philosophical views, in every department of medicine; especially is this true, in physiology and pathology. The advancement in these branches of medical science has been truly wonderful. Very many of the old illogical dogmas, theories, and isms are being swept from their antiquated moorings, by their onward march. *Inductive* reasoning and teaching have become "the order of the day," as necessary and *imperatively* demanded in medicine as the sciences; and through its *exact and philosophic* requirements is leveling many of the heretofore rough places in medicine, and reducing much of the speculative to the positive. *Scientific men and women will no longer believe, unless they can either hear, see, or feel.* But, for the supremacy of induction, as the only *reliable* mode of discovering medical truth, medical science would forever group its way in the dark. *Induction begins with facts, while deduction begins with ideas.* By the former mode of reasoning and investigating, medical science has always made *real and lasting progress*; by the latter, the most visionary, ridiculous, and one-ideal systems and theories



have been established, upon the most illogical, irrelevant, and inconclusive reasoning; rules and data drawn from the most narrow, unscientific, and often *purely selfish* views. It is indeed, almost mortifying to read and observe, in many of our textbooks and medical journals, the headlong haste with which some particular remedy or proposition is taken into favor, eulogized and applauded as a very catholicon for all the ills to which human flesh is heir; without caution, without selection, without careful discrimination, and without reference to the rules of a safe, logical, induction, from a reliable and scientific premises. Most obviously their testimony, with all safe and scientific reasoners, must be severely criticized, if not rejected. As scientific observers and logicians, they must be classed with the renowned Smollet, who, having met at an inn, in France, with a scolding chambermaid and a red-haired hostler, who engrossed his whole attention, he immediately entered on his journal: "The men in this town are all red-haired, and the women all scolds." So with this deductive mode of reasoning in medicine, the conclusions are too often far from facts. *Especially*, in my judgment, is this the case with Bloodletting, in Pneumonia.

Some of the ancients bled in Pneumonia. Their patients had the good fortune to get well, therefore, from that day to this, many of our authors and practitioners insist that bloodletting *is the remedy* in pneumonia.

Sweeping general conclusions are drawn from circumstances which may have been purely accidental. All such hasty conclusions, such illogical reasonings, such loose and unskilled observations, will never advance medical science. That distinguished French writer and teacher, Valpeau, has given an appropriate reply to all such self-conceited, in matters pertaining to medical observation—this assumption of correctness, simply because of its antiquity. When he had occasion, at one time, to reprimand a nurse for having disobeyed his directions, she replied to the effect, that having been 20 years a nurse in that hospital, she ought to know something. "It is true, Madam, that you have been 20 years in this ward, so has that stove, but it has not learnt much." For all such extremes there is but

one remedy—a closer scrutiny and more careful examination of *facts and testimony*; a *severer scrutiny of apparent fact*; an independent and original spirit of *inductive investigation*, in all our medical researches: *insist upon a more rational medical logic*, which, after all, is but another name for practical common sense.

In the sciences which have life and health for their subject, the apparent dissimilarity of the facts which are often made the object of study and comparison, often prevents the true relation between them from being readily detected and understood. Here it is that the inductive and rigid mental training, which the previous cultivation of the physical science affords, becomes peculiarly valuable, both to the physiologist and pathologist.

The important part of the process of induction consists in seizing upon the probable connecting relation by which we can extend what we observe in a few cases to all. In proportion to the justness of this assumption, and the correctness of our judgment, in tracing and adopting it, will the induction be successful. The subject or condition to be investigated, or the analogies to be pursued, must be those suggested from already ascertained laws and relations. These, in proportion to the extent of the student's or inquirer's previous knowledge of such relations, subsisting in other parts of nature, will be his means of guidance to a correct train of inference, in that before him. It has been by the exercise of, perhaps, unusual skill in this *inductive way*, that our greatest physiologists and pathologists have been able to achieve their greatest triumphs, in the reduction of stubborn facts under the dominion of general laws. Many of these laws are alike important, from their extensive range, and interesting from the unexpected nature of the results to which they quite frequently lead; and although their application, may sometimes appear forced *and even inconsistent* with the usual simplicity of nature, further investigation will often, *and very generally*, demonstrate that the difficulty is more apparent than real; frequently, *yes, very generally*, arising solely from preconceived ideas, degenerating into indellible prejudices,

looseness of observation, lack of positive knowledge, and diminish in proportion as we fix our attention inductively upon that complex combination of causes, and unity of plan, with variety of purpose, by which is produced that endless diversity of action, with harmony of form, so remarkable in man and the entire animated world.

It must be remembered, however, that in comparing facts, causes, cases, combinations, or phenomena of health or disease, of any kind, for the purposes of arriving at a principle common to them all, it is necessary to feel certain that they are of a similar character. Indeed, the sagacity of the student or investigator is often more apparent and displayed in this discovery of that relation amongst his facts, which allows of their being compared together, than in the inferences to which such comparison leads him.

Although the labors of the anatomists, physiologists, and pathologists have not, as yet, unveiled more than a small portion of that great general plan of nature, the complete discovery of which may, perhaps, be reserved for another Harvey or Jenner, many subordinate and valuable principles have been discovered and placed on a solid and lasting foundation, besides many more which were at first considered doubtful, are daily receiving fresh confirmation.

“The first and last object of the Science of Medicine is healing. All branches of it culminate in the *ars medendi*. Of course the idea of healing presumes a subject on which it can be practiced. This is what we call disease. And now, right here, in the very beginning of our discussion, we meet the first obstacle, and by no means the smallest one. You may now with much propriety immediately ask me to define what I call disease. The task, gentlemen to define *correctly* and *exhaustively*, is one of the most difficult in all and every one of the different departments of science, and still more so in the empirical or natural sciences. True, I might, in attempting to define disease, with apparent propriety say, disease is simply the negation of health. But that certainly would not answer the question, any better than it would satisfy you intelligent gentlemen,

and consequently here we encounter the second real obstacle, for it is quite obvious that your next enquiry will be "what is health?" We must, therefore, constantly bear in mind, while considering this question, that Health and Disease are abstract ideas, only employed for convenience sake, and signifying collectively a series of manifestations on the part of a certain amount of Matter constituting an "Organism." Now, you see, before we can describe either, we are wandering still farther into this labyrinth of definitions. Matter—Organism—what are they? Do they possess form—structure—and function? Are Matter and Organism identical, or do they differ, and if so wherein is the difference? Having followed up this backward course step by step, we finally arrive at the question under discussion—"Pneumonia—Disease."

The first question then that necessarily follows is, What is Pneumonia? Is it a disease of function, structure, or both? All diseases consist in a change from the natural or normal condition of the function or structure of the human "Organism." It is quite obvious, therefore, that we cannot obtain an accurate or reliable knowledge of the nature of Pneumonia, until after we have carefully examined and attentively studied the component parts of which it is composed. As the Anatomist or Physiologist examines carefully structure and function by separating or analyzing them into their separate and constituent parts, before he enters on their contemplation as a whole, so must the Pathologist carefully analyze, separate, study, and patiently examine and repeatedly and frequently compare the results of his analysis of the constituent parts or elements of disease, before he attempts to understand them or classify their combined influence and actions upon the "wonderfully made" or delicately organized human "Organism," or attempts to select recommend, or apply his antidotes or remedies. The question under discussion, however, more especially involves the propriety of bloodletting as a remedy in the treatment of Pneumonia. Therefore, in accordance with the above propositions, before we either *approve* or *condemn*, it behooves us, as medical men, guardians of public health and human constitutions, to

study well and *carefully the disease*, learn fully its anatomy, physiology, and pathology, learn fully and carefully the exact condition of the patient, *or human organism* to be remedied; examine carefully the structure and every constituent part and element of which the disease is composed, and then, *if possible*, decide what may be required to antidote or remedy it.

In Pneumonia, we first have an *initial or premonitory* stage, characterized by a dryness of the pulmonary membrane, and probably intense arterial injection. There immediately follows intense injection of the pulmonary capillaries of the lung. This is very important to bear in mind, *that the seat of the injection, or congestion, is in the pulmonary and not the bronchial capillaries*. In considering this question it is necessary to examine carefully into the arrangement of the bloodvessels of the lungs, to define explicitly and clearly the parts to which each set is distributed, and to ascertain the exact portions of pulmonary substance involved in the pulmonic inflammation. The true respiratory portion of the lungs, consists of a series of air-sacs, situated at the extremity of each bronchial tube. These air-sacs are separated from each other, by their membranous walls. The pulmonary arteries are the only bloodvessels distributed to the air-sacs. These vessels ramify in the walls of the sacs, and form in them the pulmonary plexus. They are engaged not simply in carrying blood for the special function of the lungs, but also for the nourishment of the tissue to which they are distributed. Although the bronchial arteries pass along the bronchial tubes and supply the structures of those tubes and the areolar tissue of the lungs, they send no branches to the walls of the air-sacs, which are solely occupied by the plexus formed by the pulmonary artery.

In speaking of the areolar tissue of the lungs, I wish to be distinctly understood that no such tissue is found in the walls of the air-sacs; it is only demonstrable in the adult lung around the bronchial tubes, the larger bloodvessels, and the lobules, as well as beneath the pleura. Such, then, being the distribution of the bloodvessels of the lungs, and the arrangement of the areolar tissue, the next point for consideration is the exact seat of the pneumonic inflammation.

On examining, under the dissecting microscope, a piece of inflamed lung, which has reached the stage of hepatization, it is at once seen that the seat of the exudation is the air-sacs. As the air-sacs are the seat of the exudation, it is obvious that the exudation must be poured out from their walls. The structure composing these walls must, therefore, be the seat of the original inflammatory process; and as they contain no other vessels than those derived from the pulmonary artery, it must be the branches of this vessel alone which are involved in the disease. The blood in them is dammed up, and the heart's action increased in consequence. The substance of the lungs, that is, the respiratory portion of them—the air-sacs—are gorged with blood or bloody serum. The functions of respiration and circulation are consequently both greatly interfered with—impeded, accelerated, and otherwise changed from their normal standard. There is too much blood—its motion partially increased and partially diminished, and not air enough in the lung, *without any actual disorganization*. The temperature of the body is exalted; respiration becomes difficult and is performed chiefly by the diaphragm and abdominal muscles—is spasmodic and very painful. The patient takes many forced or spasmodic inspirations, sighs, or gasps, while the breathing is very much quickened on the least exertion. The functions of the nervous system are also impaired by reason of the defective oxygenation of the blood; the skin assumes a blue, cyanotic, unhealthy look, denoting only too plainly that the aeration of the blood is but imperfectly performed; there is now clearly too limited a quantity of carbonic acid exhaled, and oxygen inhaled. The blood is becoming chemically changed; the respirations are hurried and labored, with severe pain at each inspiration. The skin is dry and hot; the pulse full and quick; bowels inclined to constipation; urine scanty and high-colored; some cough, which at first is usually dry or attended with but little mucous expectoration if the disease is uncomplicated. Sometimes, however, the expectoration is profuse early in the disease, and is a viscid semi-transparent matter, which very soon becomes *reddish or rusty colored*—dependent upon the quantity of blood present.

If auscultation be now practiced—the ear or stethoscope applied to the chest, a profuse crackling sound—crepitation—is heard. There is now *intense congestion of the lung*, which constitutes the period of high febrile action, or the first stage of the disease, according to *Laenec*.

In a vast majority of cases, this stage or condition of active congestion, lasts but a short time. The blood having become stagnant in the pulmonary capillaries, its particles adhere to each other, and to the walls of the bloodvessels, and the obstruction is confirmed, and solidification commences. If this stagnated, engorged, and congested condition be permitted to remain, increase, and progress, the lung substance soon undergoes further and more destructive alterations. It still remains congested and red, externally and within; but it crepitates no longer under pressure; it now contains but very little or no air. The spongy character of the organ is lost; there is now an interstitial deposit of lymph into the air-sacs. The cavities are filled with solid matter, and if a piece of lung in this condition be placed in spirits for a time, moulds of the cavities can be drawn out. The second stage of the disease—*hepatization, or solidification*, is now *fully inaugurated*.

The breathing becomes quicker, shorter, more labored, and difficult; the pulse small, quick, thready, and feeble; the dullness on percussion is remarkably increased. Bronchial respiration, with bronchophony and whispering bronchophony, usually ensue, denoting solidification, and are, of course, increased or modified, in proportion to the extent and severity of the disease, or the amount of lung involved.

If the disease be allowed to remain, and proceed in its course, it soon produces further changes and graver consequences. The air-sacs or cells being obliterated, and the pulmonary capillaries dammed up with blood, the aeration of the blood is still more improperly and imperfectly performed; the pulmonary circulation is to a certain extent arrested. The blood itself is changed in its chemical composition; it no longer passes freely over the air-cells of the lungs, to be exposed to the aerating action of the atmosphere. The hemato-globulin is changed, by

reason of this defective oxygenation, and the blood is sent back through the systemic circulation, loaded with carbonic acid, and deficient in oxygen; and, as a consequence, the brain, nervous, and muscular systems robbed of their accustomed and essential stimulus. The chlorides disappear from the urine, the temperature of the body is lowered, *all the vital powers* of the system reduced, the products of the inflammation changed from plastic to aplastic, and then actual disorganization commences; the interstitial lymph gives place to purulent fluid; and the *third stage* of the disease, gray hepatization or softening, is at hand.

I shall not trace the anatomy, physiology, nor cause of the disease any further, at this time, as the principal object of the discussion to-day is its treatment; *more especially, bloodletting as one of its remedies*—and no sane man, I hope, would ever think of bleeding a patient in the third stage of Pneumonia.

What are the indications for treatment in Pneumonia? what the pathological condition to be remedied? In the early or first stage of the disease, we have an intense injection and congestion of the pulmonary capillaries of the lung, which is soon followed by engorgement and infiltration of the air-cells and parenchyma. There is too much of the blood retained in the organ, and, as a consequence, respiration and pulmonary circulation are impeded. The question arises, what is the cause of there being too much blood retained in the lung? Is it because there is too much blood in the system? I apprehend not, as a general rule. On the contrary, we very frequently meet with the most violent attacks in quite anæmic subjects—subjects who are deficient both in quantity and quality of blood. In these cases, at least, we must look for some other exciting cause than the quantity of blood on hand. The object to be accomplished by the treatment, in this stage, is to unload the lung and its pulmonary capillaries of the surplus blood, to equalize the circulation and lessen the heart's action, in order that the blood shall not again be pumped back upon the lung with too much force, or in unusual quantities. Now, how are these very desirable objects to be attained? A very large number of very intelligent and very eminent practitioners say,

by bloodletting. To this I must object. I contend, that it is too expensive to the constitution, *and unnecessary*. I hold that we are possessed of other means of treatment that are more rational, less expensive to the constitution, and equally efficacious.

Why is bloodletting expensive to the constitution? What remote effect does the loss of blood produce upon the constitution? Does it lessen the quantity of blood in circulation? Yes, but only for a short time. Does it change the quality of the blood? Yes, very materially, *and very deleteriously*. How, *and why?* Because we rob it of its red corpuscles, which are destroyed and diminished in quantity by such means, much more rapidly than the other constituents of the blood. I hold, that to be particularly deleterious and expensive to the vital powers of the constitution, because the red corpuscles constitute that portion of the blood that possesses the calorific and vivifying powers. They contain the globulin, hematin, and the principal portion of the phosphorus, fat, and potash salts, the material especially prepared by the blood-cells, and used so largely in the construction and nutrition of the nervous and muscular fabrics; constitute, as it were, purveyors to the nutrition of these tissues, robs the vital fluid of its nutrient and plastic materials; and when we remember that the functions of the blood are, first, to maintain the activity of the nervous and muscular systems, and, secondly, to supply the materials for the great molecular changes constantly going on in the tissues, we can readily understand why its withdrawal from the system so frequently produces that peculiar condition of the brain and nervous system, marked by great weakness and extreme irritability.

Arterial blood is a powerful stimulant to the brain, while venous blood is equally as powerful a sedative. Hence we can account for the convulsions in children, sick with Pneumonia, upon the theory that they are suffering from a poison,—an overdose of a powerful sedative; so, also, upon the same theory, we must also account for the prostration that so often ensues in adults sick with Pneumonia. The blood, in this disease, is

already abnormal in quality, by reason of imperfect aeration, is at least from five to ten per cent. deficient in oxygen, in consequence of obstructed and impeded respiration and pulmonary circulation. Then, to take from it its globuline, hematin, and other nutrient materials, by general bloodletting, certainly seems to me to be illogical and an irrational procedure. Again, we all know, that even if we do gain any advantage over the congestion, by reducing the quantity of blood in circulation, it is but temporary; for the reason that the effects of bloodletting are not as lasting upon the quantity of blood in circulation, as upon the quality. The quantity is soon made up by absorption from the watery portions of the tissues, so that the volume does not long remain diminished, and the heart soon has as large a quantity to propel, and the already weakened and diseased lung, as large a quantity of an inferior, less nourishing, article to aerate, because it has just been robbed and diluted by bloodletting, and is, therefore, poorer, less nourishing, less stimulating, and less capable of sustaining the sinking vital powers of life. Even the celebrated Dr. Graves, himself an ardent bleeder, says, in his *Clinical Lectures*, page 473, English edition, "bear in mind, it is important that you can cure patients with the least possible amount of bleeding, for, remember, that *every ounce of blood you draw is very soon replaced by two of poorer quality.*" If this be true, diminishing the quantity by such means amounts to but little, as a remedial measure, at best, is positively injurious, because it injures the quality of the blood, renders it less capable of sustaining life; and this is especially important when we bear in mind *that other one of the few positively well-known facts in our science*, which is that the proximate cause of death, in the great bulk of acute diseases, is *asthenia*, and that nothing tends or assists to produce asthenia as promptly as bleeding. Again, it is also a well-known fact, that the mode of death, in many of the diseases of an exhaustive nature, is by edema of the lungs; and, now, is it not clearly this "poorer quality" of blood, produced by copious bleeding—this dydræmic condition—that is most favorable for transfusion—œdema? This being an unquestioned

fact, *I say, unhesitatingly, that bloodletting, in Pneumonia, is too expensive to the constitution, and the advantages gained over the disease are not equal to the waste.*

I am aware that, in Pneumonia, the tendency towards degeneration is promoted by the disordered circulation in the lung. But is it claimed by its advocates, that the bleeding from the vein, in the bend of the arm, has any direct effect upon the coagulated extravasations and exudations of the inflammation in the lung? I apprehend not. Bloodletting, at best, cannot be relied on, as a direct curative agent in Pneumonia.

It is now, I think, pretty generally conceded, by even the most authoritative of our modern authors, that bloodletting is not even an antiphlogistic remedy, properly so called; that its therapeutic action consists solely in lessening the force and frequency of the heart's action; in other words, in diminishing the intensity of symptomatic fever. It is addressed, not directly to the local affection, but to the symptomatic febrile movement, and can, therefore, only influence the local affection indirectly, in so far as the latter is intensified by the former. On the contrary, as I understand, the objects of the abstraction of blood by general bloodletting are, first, to ease the gorged capillaries of the inflamed organ, by first reducing the quantity of blood in circulation, so, as some of its advocates claim, "to restore the equilibrium between the amount of blood in circulation and the air respired, which had been impaired by reason of the inactivity of a portion of the lungs, by reducing the amount of the circulating medium." This, it seems to me, is an unreasonable, illogical proposition. If it is essential to reduce the quantity of blood in Pneumonia, so as to balance the amount of lung in use, why not apply the same treatment in other disease—in tuberculosis or consumption? Do we not frequently, in these cases, have a large portion of the lung impervious to air, and useless for respiratory purposes? Should we, therefore, in these cases, bleed and rob the poor victims of their little depraved blood, in order to reduce the quantity of blood to correspond with the amount of lung in use? *Nonsense!*

I think it is abundantly clear that the quantity of blood car-

ried to the lung, by the pulmonary artery, can not be increased or diminished by any supposed requirements of their tissue, for a greater or less supply of blood. The blood so conveyed must be in strict accordance with the quantity of venous blood furnished by all the organs throughout the body, taken in the aggregate, which will likewise be in precise relation with the activity of function then exercised, and will, in like manner, exactly tally with the degree of "vitality," which is in active exercise throughout the body at the time. When the lungs become engorged, it is not on account of the failure of the nutrition, but because, from some cause, the venous blood, when brought to them, fails to become arterialized. There is too rapid molecular motion in the tissue of the lungs. It is retained in the lungs, and these organs become engorged, because the blood is not arterialized and transmitted on to the extremities of the various parts of the body. Many causes are capable of producing these results. To remedy this difficulty, my proposition is, that the treatment should comprise such measures, as will remove or counteract such local determination and derangement, without compromising the constitutional powers of the patient.

Now, most practitioners know, from sad experience, that bleeding does not always arrest the inflammatory action. On the contrary, there is great danger that it may continue and even be increased and extended, in spite of the most copious bleeding. In such cases, at least, there is great danger that the strength of the system will be reduced and compromised, so as to prove unequal to the process of restoration; for, to remove the interstitial extravasation and repair the damage that has occurred, and keep the powers of life moving, a certain degree of vital power is requisite, together with a sufficient supply of healthy, undiluted, nutritious blood.

Even when the bleeding does arrest the inflammation, it may be, and, in my opinion, is very liable to render them lingering in their departure, or even increase and determine their fatality. That is, the subsequent debilitating effects of the loss of blood upon the system may be, *and are likely to be*, more certain *and*

hurtful, than the effects of the bleeding upon the local inflammation is beneficial. In selecting our remedies in the treatment of Pneumonia, we should always bear in mind the important fact, that acute Pneumonia, marred by no anomaly, complicated with no other malady, and occurring under ordinarily favorable circumstances, generally tends towards recovery, resolution, and a favorable issue. Therefore, it does not require as active and heroic measures, as those diseases whose mortality is much greater. I say *generally*—but it does not always result thus favorably. In some cases, it assumes from the commencement an adynamic, or an otherwise unfavorable character. Unwonted and accidental symptoms manifest themselves in its progress; owing to various contingent causes operating during its continuance—causes proper to the individual affected, or to a peculiarity of the nature and combination of the external agents which produce it. Age, sex, constitution, locality, epidemic influences, state of the season, atmosphere, or the epidemic constitution upon which it supervenes, all tend to complicate and change the natural tendency of the disease. These influences should all be looked after carefully and taken into account, before we apply, or decide upon our remedy.

We must treat every case according to its own individuality. We must be governed by the particular symptoms and manifestations present, and not by the name. In no disease, perhaps, is this more important, and more clearly and imperatively demanded, than in Pneumonia. I say, then, it is especially important that we constantly keep in mind, while prescribing in this disease, the fact that in a vast majority of cases the disease will get well in its own natural course, without any kind of medical treatment, where not complicated. This fact I think is as well understood and established as any other one fact concerning the disease. And, again, that it has two distinct periods, with distinct symptoms and indications of treatment. The stage, or period of congestion, high febrile action, and that of hepatization and disorganization.

If we had no recorded evidence, no statistics, no accumulated experience, nothing except general principles to fall back upon,

even then, in my judgment, bloodletting could only be considered a logical remedy in the very commencement of a few exceptional cases—only admissible in certain sthenic cases in young, robust persons. But most happily for frail and anæmic humanity, we are not thus devoid of recorded evidence—statistical proof against the use of the lancet in this disease. Our latest and best standard works, our best and most scientific journals, are full of statistics from the leading, best educated, and most experienced practitioners in medicine, giving us plenty of undeniable, indisputable proof that the indiscriminate use of the lancet is not only useless, but very often hurtful in the treatment of Pneumonia. The record of the accumulated experience shows that the French physicians, who certainly bleed often and copiously enough to satisfy the most bloodthirsty, lost an unusually large per cent. of their patients. Experience, *that establisher of facts*, has proved most undeniably, that even the entire expectant plan of treatment has saved a much larger per cent. of patients than the most profuse bleeders. Now, let me give you the statistics, the recorded evidence, so that you may understand what kind of proof I rely upon to substantiate my propositions.

First, I will give you the record and statistics, as recorded by Prof. Austin Flint, Sen., M.D., who is undoubtedly the most experienced and thoroughly posted practitioner upon this subject in America, *if not in the world*. Prof. Flint's cases and statistics embrace the record of one hundred and thirty-three cases, treated during a period of twelve years. His observations were made and oft repeated during this long space of time, as well as in different latitudes, embracing the points of New York City, Buffalo, N. Y., Louisville, Ky., and New Orleans. A portion of the observations are the results of private practice, the balance of hospital practice at the four several localities and latitudes above named. Out of the one hundred and thirty-three cases treated and recorded by Prof. Flint, at the several points named, and extending over a period of twelve years, previous to 1861, he informs us that he practiced bloodletting, either general or local, in one case only. Many of them

were paupers—persons who had been poorly fed, clothed, hard drinkers, as well as victims of all kinds of vice and debaucheries—*people whose vitality averaged low*, and were therefore among the most unfavorable to treat. Thirty-five out of the one hundred and thirty-three died. Of the thirty-five that died, nineteen were confirmed inebriates or inveterate hard drinkers, several of them in collapse, or *articulo mortis*, when received into the hospital, therefore ought not to be charged to the treatment. The mean duration in these cases was a fraction over twelve days.

Prof. Flint first published his observations in the *American Journal of Medical Sciences*, in 1861; then, in 1864, he wrote a memoir upon the subject for the United States Sanitary Commission, in which he distinctly reiterated the same views and results, with increased confidence and assurance in their entire correctness. Then again, in 1869, in the revision of his great work on the Theory and Practice of Medicine, he distinctly and emphatically expresses the same views and experiences. Thus, making a period of twenty years, during which time he was constantly engaged in investigating and writing upon this special subject. Therefore, I claim that his opinions and reports are entitled to especial consideration. He says, “A candid review of the discussions and comparisons which have taken place within the last few years respecting bloodletting in Pneumonia, together with the results of clinical experience, *can hardly fail in the positive conviction that employed indiscriminately, it does much more harm than good.*”

Prof. Razeri, a celebrated Italian practitioner and pathologist, also instituted an extensive series of observations upon this subject. He states his experience and results to be unmistakably that a much larger per cent. of his cases recovered from the first stage, and without hepatization when he treated them with antimony, anodynes, and fomentations alone, than in those where he bled. Again, that he had a much smaller per cent. of mortality in those cases treated with antimony, anodynes, and fomentations alone, than in those where he practiced venesection. And thirdly, the mean duration in the cases treated with anti-

mony, anodynes, and fomentations alone, was several days less than those treated by bloodletting.

Prof. A. T. H. Waters, M.D., Physician to the Liverpool Northern Hospital, in a paper read before the Royal Medical and Chirurgical Society, in November, 1869, also gives us some very valuable information upon this subject. The paper is founded upon the results of treatment in fifty-three consecutive cases of acute Pneumonia.

Of the treatment. Venesection was not practiced in any case. Only three were cupped, and only two had leeches applied. Whenever antimony was given, it was always in small doses—from one-twelfth to one-fourth of a grain—except in two instances, in which it was given in doses of three-quarters of a grain and a grain. In thirty-three cases, a large majority of the whole—no antimony was given. In a large proportion of the cases some kind of alcoholic stimulant was given early in the disease. In thirty cases alcoholic stimulants formed the main therapeutic agent, and in some of the most severe cases no other medicine was given. In every case nutriments were allowed freely—*viz.*: beef-tea and milk, with alcoholic stimulants from the commencement of treatment, and solid food as soon as the patient could take it.

Of the results. Of the fifty-three cases, one died. In this case, after convalescence had apparently set in, and the pulse had fallen to 80, effusion into the pleura took place somewhat suddenly, to a large extent, and death soon followed. The average duration of the fifty-two cases that recovered, from the commencement of treatment to the period of convalescence—namely, when all active symptoms had subsided, when the pulse had fallen to a natural or nearly natural standard, and when the patient could take solid food—was $8\frac{1}{8}$ days. The date of commencement of the attack was clearly ascertained in most of the cases. The average duration of these from the onset of disease to the time of convalescence, was $11\frac{1}{2}$ days.”

“Dr. J. H. Bennett, in his Clinical Lectures, gives a tabulated series of the cases of acute Pneumonia, which for sixteen years he has personally treated in the clinical wards of the Royal

Infirmary at Edinburgh, and gives as his results, a mortality of one in thirty-two and a-quarter. *None were bled, and in all the uncomplicated, whether single or double, not one died*; his series being 105 in number. His treatment was nutritious and stimulating. Beef-tea and wine-whey, given alternately, regulating the frequency by the severity of the case. In the most severe cases they were given every two hours, three or four ounces every hour alternately, so that the patient gets from six to twelve ounces of sherry wine daily, that is, during the waking hours of the twenty-four. When there is great debility, milk punch or brandy punch is substituted for the wine-whey."

The results of these cases tend to prove that Pneumonia is far from being a necessarily fatal malady, and that under any plan of treatment which consists in supporting the patient and in abstaining from depletory or depressing measures, its mortality is low.

Do not understand me, however, as arguing in favor, or adopting the entire expectant plan of treatment; *that is too extreme*; I am no Homœopath; I believe in active, energetic medication; I am an advocate for applying such means and measures as *will best assist nature*, without compromising the vital properties of the blood, or the strength of the patient. Bloodletting does compromise the vital properties of the blood—robs it of its nutrient elements, its red corpuscles, its globulin, hematin, phosphorus, fat, and potash salts. Again, in a vast majority of cases *it does not arrest the disease*, but in spite of the bleeding the inflammation passes on, perhaps in a modified form, and the dreaded exudation into the air-sacs or cells takes place. This exudation consists of the solid portions of the blood, and in ordinary cases amounts to from four to six pounds. Thus, you see, the blood—the vital current—that carries nutriment to nerve, bone, and muscle, is robbed of its nutrient and life-sustaining elements, *both by the disease and the remedy*. This, I claim, is unscientific, unreasonable, illogical, and *unnecessary*. What can be more plainly indicated in the above condition, than, to nourish and sustain the patient, nature, by every manifestation, calls for help—pleads for additional power

to throw off the incubus. Can we, as intelligent physicians, refuse this aid when in our power to grant it? "and instead of bread give her a stone?" cripple and confuse her efforts by means of bleeding and unwise medication?

Again, the period of engorgement, *certainly the only time or stage when venesection could logically be admissible, at best*, very often lasts but a few hours. Prof. Flint says: "I have known an entire lobe to be solidified by two pounds of exudation matter, as determined after death, in less than twelve hours. Not unfrequently this stage does not extend beyond twenty-four hours."

All these important facts and circumstances must be borne in mind while we examine and prescribe for each individual case. The history of the results of the different kinds of treatment has always been in favor of the non-bloodletting plan. Even as long ago as Watson's day, the propriety of bloodletting in Pneumonia was strongly questioned. Watson, the famous author, himself a very strong advocate for bloodletting, makes the following significant apology for its unfavorable comparison when brought to the test of comparison, with other modes of treatment. At page 633, in his work on the Practice of Physic, he says:

"To dictate the treatment of Pneumonia is not an easy task. It may sound like a paradox, but concerning this disease I believe it to be true, that the very perfection of modern diagnosis has helped to bring uncertainty and vacillation into our practice. Inflammation of the lung, which might escape all other modes of investigation, reveal themselves infallibly to the ear. By the same sense we learn as surely that many of these otherwise latent inflammations run their course without any great commotion of the general system, whether they kill or whether they pass gradually away. These forms of Pneumonia neither require, nor would they endure, nor have they had addressed to them, so far as I am aware, the active measures, which, prior to the use of auscultation, *were enjoined as proper in unmixed inflammations of the lungs*. On the contrary, the current has set and is setting (too strongly, I conceive,) in the

opposite direction. A most distinguished French author, M. Louis, has endeavored to show that venesection has not much control over the progress or the issue of Pneumonia in any of its forms; and in our own country that doctrine has been adopted by at least one very accomplished physician—adopted, for Dr. Hughes Bennett maintains that antiphlogistic remedies in general, and bloodletting in particular, are *unsuitable and even hurtful*, in all acute inflammations. I believe that I might ascribe similar opinions to physicians and surgeons of eminence in this town. My own experience teaches me that such flagrant and sthenic forms of Pneumonia have become very rare among us. *Years have passed by since I have met with an instance of that disease which has required phlebotomy.* I may say much the same of inflammatory diseases in general. *They have all, as I firmly believe, been much less tolerant of bloodletting since the cholera first swept over this country in 1832.* I may be fanciful, but I think that great epidemics, such as those of cholera and influenza, leave traces of their operations upon the health of a community, long after they have ceased to prevail as epidemics.”

That certainly is a frank and positive confession or admission that the bloodletting plan of treatment did not successfully stand the test of comparison with the non-bloodletting and sustaining plan—but certainly a very curious, and I apprehend flimsy attempt to explain away an *inexorable result*, an unscientific and an illogical attempt to cover up and account for an unalterable and a necessary failure.

Happy would we be if we could at all times avert the evil of protracted suffering by timely and judicious medication. In the treatment of disease, if we are making any advancement, we must be able to understand cause and effect, we must know something of the *dynamics of our profession*. We must find out the character of the disturbance and attest our skill by the application of remedies calculated to give speedy and permanent relief. We want systems pregnant with common sense—theories that, when it becomes necessary, will remove impaled humanity from the fatal stake, and not the stake from them, that

will lift them up out of the water that threatens to submerge them, and not attempt the ridiculous and futile labor of pulling the billows from around them.

In Pneumonia, as in all other diseases, we should select our remedies with direct reference to symptoms present, and the indications of the case, and not because it is Pneumonia. If I found quick, hurried, painful, and labored respiration, full, hard, quick pulse, and other indications of active congestion of the lungs, I should at once attempt to counteract the difficulty and tendency. If the case were severe and the symptoms urgent, I would at once administer a brisk saline purgative, which will deplete, promptly *and sufficiently*, without the loss of blood corpuscles, or spoliation. I would also immediately apply hot stupes and fomentations, with mild counter-irritants, to the chest and extremities, or, even to the whole external surface, if necessary; I would invite *and urge* the blood to the extremities and the surface; I would, at the same time, administer such nervous and arterial sedatives as are known to control the heart's action promptly, without robbing the vital current of its nutrient elements. My experience, as well as the united evidence of many very competent practitioners is, that by reasonable energy and perseverance we can accomplish these very important and very desirable objects without much delay. Enveloping the chest with cotton batting covered with oil-silk, has a fine influence upon the capillary circulation about the chest. When we have once controlled the heart's action, we can place a sentinel over the pulse, *who can say with full confidence of being obeyed, so fast and no faster*, and if he perform his duties faithfully, we may quite confidently expect the patient to have a speedy convalescence, *because he has only to recover from the disease, and not from what is often harder, the bleeding*.

Another proposition of equal importance is to attend carefully to the diet. The early administration of stimulants and nourishment forms an important element in the treatment of Pneumonia, as well as of all other acute affections. In the early stages of a severe attack, there usually is but little desire for food; and there is risk, if the mere feelings of the patient

are alone consulted, that nourishment may be withheld too long. Nourishing animal broths, such as beef-tea, chicken broth, and milk, may be safely allowed, even in the most acute stage; and, as the case progresses, the diet should be more liberal and supporting.

Now, you will perhaps naturally inquire, with what particular article of the materia medica I propose to control the heart's action? I shall answer with *veratrum viride*. I regard it as the most valuable arterial and nervous sedative at our command. It acts promptly, *certainly, and kindly*, when carefully administered and watched. I prefer it to the tartar emetic, in Pneumonia, because it is less violent in its action, and much less exhausting to the strength and constitution. It seems to be peculiarly and particularly adapted to the treatment of inflammation of the lungs. It controls the heart's action promptly, and thus relieves the congestion, without robbing or spoiling the blood; and resorted to promptly and early, will *certainly obviate the use of the lancet*. Nor need we be surprised at this, when we consider that *veratrum viride* affects the system, primarily, through the pneumogastric, and, secondarily, through the sympathetic nerves. Thus, we can easily and rationally account for its prompt action upon the heart and general arterial system, and, through them, upon parts supplied by the solar plexus, while the brain remains but slightly, if at all, affected.

Drs. Drasche and Kiermann, in the *British and Foreign Medico-Chirurgical Review*, for October, 1868, published some very interesting cases and statistics, from which I take the following:—"Dr. Drasche considers that the treatment of inflammation of the lungs, by *veratrum viride*, offers one of the most remarkable examples of the cure of an acute inflammation. The operation of the drug is most clearly and most early manifested in its effects on the fever; and after the first doses, or after a few hours, a partial, or general diminution of the febrile symptoms is manifested. This effect is exhibited in all the stages of Pneumonia; but it is far less certainly or constantly present in pleurisy, tuberculosis, and typhus. The pulse is diminished in rapidity and strength; and, in one case

recorded, it was reduced 20 beats within two hours, after two doses of the tincture had been taken. Together with the pulse, the temperature also falls, almost regularly, from one to four degrees; and this fall remains even after the *veratrum* is discontinued, and when the pulse rises. The respirations become less frequent, and there is decided relief from suffering. Among the inconveniences of the use of the *veratrum*, in Pneumonia, the most common is nausea, vomiting, and sometimes, diarrhœa, and, occasionally, hiccough. Dr. Drasche thinks that the *veratrum*, not only controls the fever, but also the local disease of the lungs. When it is administered in the course of Pneumonia, with yellow sputum and violent fever, the peculiar expectoration disappears in a short time, together with the cessation of the febrile symptoms; and auscultation and percussion prove that the local disease is arrested. And if, then, the medicine be discontinued too soon, the fever and the rusty-colored expectoration return, and the hepatization advances. Dr. Kiemann, who observed a great number of cases of Pneumonia, in connection with Dr. Drasche, in hospital and private practice, and has described 40 of them with great care and accuracy, agrees with the latter physician, as to the wonderful efficacy of the *veratrum*. A table is given of the period when resolution of the Pneumonia was established; the commencement of the disease being reckoned from the occurrence of shivering, and the end from the time when vesicular breathing returned in the formerly hepatized lungs. The period, as shown in the table, varied from the eighth to the twenty-sixth day. The mean duration was a little over twelve days."

My experience with this drug has been quite extensive, both in private and army practice. I think I have administered it with as much confidence and as satisfactory results as any other article of the *materia medica*. My own experience is, that in small doses, at long intervals, whereby the system is constantly stimulated to reaction, it is not cumulative, but exercises an undoubted eliminating and depurating influence over the blood and the glandular system, removing obstructions, abating congestions, relieving nervous irritation dependent thereon, and pro-

moting the venous circulation. When we so gradually increase the dose, as to control the action of the heart, but not to destroy the balance between the venous and arterial circulation, then it becomes a most valuable therapeutic, in acute inflammations. This gradual controlling the heart's action, without robbing the blood of its nutrient element, or disturbing the nervous system, is very important in Pneumonia. When we recollect the valuable and instructive experiments of T. Wharton Jones, upon the tail of a tadpole, under the microscope, where he found, that when this *visa tergo* of an artery is suddenly diminished, congestion of the capillaries and venous radicals, to which the artery leads, is established, then we can appreciate the force of the proposition. Here is where I claim another advantage in favor of *veratrum viride* over bloodletting. In bringing the system so suddenly under the influence of the loss of blood, as is recommended by its advocates, we arrest the *visa tergo* of the arterial system, and the balance between the venous and arterial circulation is destroyed, and congestion of the capillaries and venous radicals of the lungs very liable to ensue. The *veratrum viride*, at the same time that it controls the heart's action, also acts as a powerful diaphoretic, diuretic, and expectorant. Under its use we have profuse colliquitive sweating, and increased secretion of bile, urine, and a copious exudation along the respiratory passages, all of which are especially calculated to unload the capillaries and venous radicals of their surplus blood, without robbing it of its nutrient or life-sustaining elements. But in using this remedy in Pneumonia, we should always remember, while applying it in acute inflammations, our object is to prevent rather than promote exudations; therefore, bringing the system under its influence gradually, is the only way warranted by its physiological effects. I have usually employed Norwood's tincture, and found it reliable and efficient—have been amply satisfied with its action. I have also frequently used the fluid extract with satisfaction.

In the March number of the *Medical Record*, Dr. Geo. A. Ward, of New Haven, Ct., publishes a formula which he claims to find superior, and less liable to produce nausea and vomiting.

He confines himself to the use of a saturated tincture of the root, which he has found uniformly reliable. The subjoined formula is a favorite one with him:

“Ry. Sat. Tinct. Viride,-----5j.
 Potassa Chloras,-----5ij.
 Aqua Distil.,-----5ij. M.”

If for a child, he adds a little syrup. The chlorate of soda is sometimes substituted for the potassa, as the taste is more agreeable.

DOSE.—To an adult, one teaspoonful every two hours, for three doses; once in three hours, for two doses; once in four hours, for two doses, according to the effects produced. Given in this careful and guarded way, he claims no deleterious effects or emesis will be produced, while it may be carried far enough to produce its full remedial effects.

Finally, in conclusion, I desire to urge, as my positive conviction, that since bloodletting robs the blood of its vivifying and nutrient materials, by removing from it its red corpuscles, its globulin, hematin, phosphorus, fat, and potash salts, it must compromise the constitutional powers of the patient, and of necessity render them less able to stand the shock and debilitating influences of the disease; and, inasmuch as we possess other equally *or more* efficacious remedies, wherewith we can accomplish the same results equally quick and equally certain, without thus robbing the vital current of its life-supporting properties, *therefore, I say bloodletting, in uncomplicated cases of Pneumonia, is unnecessary, uncalled for, and can only be rationally justifiable in the early stage, or very commencement of extreme and rare cases.*

I quite agree with Prof. Austin Flint, when he says: “A candid and careful review of the discussions and comparisons which have taken place, within the last few years, respecting bloodletting in Pneumonia, together with the results of clinical experience, *can hardly fail to lead to the positive conviction that employed so indiscriminately as is recommended, it does much more harm than good.*”

