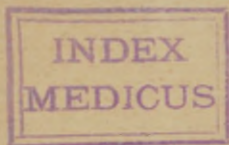


ROBINSON (B)



ON THE

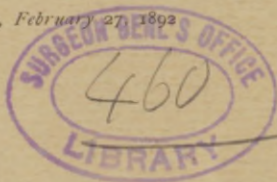
Use of Creosote in the Treatment
of Pulmonary Phthisis

BY

BEVERLEY ROBINSON, M.D.

CLINICAL PROFESSOR OF MEDICINE AT THE BELLEVUE HOSPITAL MEDICAL
COLLEGE, NEW YORK

Reprinted from the MEDICAL RECORD, *February 27, 1892*



NEW YORK

TROW DIRECTORY, PRINTING AND BOOKBINDING CO.

201-213 EAST TWELFTH STREET

1892

On the Use of Creosote in the Treatment of Pulmonary Phthisis.¹

BY BEVERLEY ROBINSON, M.D.,

CLINICAL PROFESSOR OF MEDICINE AT THE BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

Reprinted from the MEDICAL RECORD, February 27, 1892.

AMONG the numerous remedies which have been praised during the last few years in the treatment of pulmonary phthisis none seems to be so useful as creosote. Moreover, none has acquired in its favor a larger number of competent and careful clinicians.

The information I have obtained as to its importance is not merely that taken from printed reports of cases, nor simply from hospital histories—which as regards the therapeutics of chronic disease are of necessity unreliable—but it is also the information afforded by the results which I have reached with patients in private practice. These latter cases are especially valuable because I have been able to watch them carefully in almost every particular, and because I have continued my observations of some of them during many months, or even years. Besides knowing the conditions which surrounded them I have been able at times to regulate them. For this reason complications have been infrequent and my conclusions are less open to criticism than they otherwise would be. Judged fairly in comparison with other drugs I have come to regard creosote as the most valuable medicinal agent we have at the present time for the treatment of pulmonary tuberculosis.

¹ Read before the Section of General Medicine, at the New York Academy of Medicine, November 17, 1891.



On many occasions, also, I have questioned my medical brethren closely, and I have been much gratified to find that almost invariably they speak of creosote in terms of like praise.

Despite the fact, therefore, that there is possibly nothing new to offer you, and although the literature of creosote may be more or less familiar, I believe a discussion of the subject by the members of the Section of General Medicine of the Academy will be interesting and profitable. The reports of your proceedings are read with great interest, I believe, by nearly all American physicians of repute. I am sure, therefore, that whatever is thought of creosote by the members of this Society will forcibly influence the thought and action of medical men throughout the United States.

Recognizing this fact, I have requested your Secretary to accord me permission to open the discussion with a short statement of what I consider to be the essential points of the creosote treatment of pulmonary phthisis.

Some of you are aware that I presented a paper on "Creosote as a Remedy in Phthisis Pulmonalis" to the Association of American Physicians at their meeting held in Washington, September, 1888. This paper, unfortunately, was not read at the meeting owing to lack of time. Later it was published in the "Transactions of the Association," with the appended cases, and also in the January number of the *American Journal of the Medical Sciences* for 1889, without the cases. In this paper I showed how I was led to use creosote among the first in this country, how my faith in its virtues gradually increased, and upon what basis this faith was supported. I concluded from my own observations and those of numerous clinicians, mainly in Europe, that the curative effects of creosote in the treatment of phthisis pulmonalis are very notable and merit recognition. Indeed, I was almost inclined to be enthusiastic about the drug, had my zeal not been wisely tempered with the knowledge of what a long, obstinate, and dread disease we have to do with. To-day I have just the same confidence in the utility of creosote that I had more than three years ago, and the faith which is in

me has increased rather than diminished. With an additional and broader field of experience the results obtained have not become more doubtful. On the contrary, they have been confirmed and strengthened. What are these results?

First, as regards the general symptoms. They are nearly all benefited by the use of creosote. Some are not, however, benefited immediately, or always in the same measure. Again, there are some patients in whom, I confess, the benefit is slowly obtained and with certain drawbacks. There are very few, however, who do not experience marked relief in one or more ways from the use of creosote.

Cough is very soon much diminished in frequency and severity. This is, of course, more often true of phthisis at its first stage than it is of phthisis pulmonalis at its second and third stages. Nevertheless, even in the advanced stages of lung involvement, where cavities are already present, cough is decidedly ameliorated after some months of continuous treatment. The diminution of the cough is doubtless due to the local effects on lung-tissue produced by the remedy. What these are I will state later on.

Expectoration is diminished in quantity and changed in quality. Not infrequently, at the first stage, it disappears altogether after a few months of treatment. In the advanced stages it lessens in amount one-half or two-thirds on many occasions, and from yellow or green it may become grayish, or frothy and colorless.

Nutrition is notably aided by the use of creosote. This is shown by increase of weight, which may be of two to three pounds only, or in rare cases, of ten to twenty pounds. With increase of weight there is augmented strength and activity. The mind is less depressed and sluggish, the body is more easily incited to in-door or out-door exertion of any kind. Hence all the internal viscera—the liver, kidneys, bowels—not to speak of the lungs themselves, are functionally put in better form. Appetite for food returns, and patients who previous to treatment took very little nutriment are apt to eat with relish and pleasure at their regular meals.

The digestive processes are certainly strengthened, and bowels which had been costive move with much regularity. The breathing becomes deeper, fuller, and more satisfactory. The patients appreciate and state it. The spirometer, under the doctor's eye, indicates it with unerring certainty. This latter affirmation is not a borrowed opinion, but the expression of my own observation. Night-sweats often disappear while the treatment is carried on, and those who have previously suffered from them are astonished that they no longer appear. The temperature record is often favorably influenced by the treatment. In many cases, without making use of any drug except creosote, I have seen the fever allayed and at least be temporarily absent. The kidneys, as a rule, remain in normal condition, and the secretion of urine is sufficient, and very rarely shows any signs of morbid change.

In regard to the bacilli in the sputa, I am sure in several instances that they have entirely disappeared. This statement is taken from that of men who made the microscopic examinations, and who are not likely to be deceived. In some instances expectoration stopped and there was really nothing to examine for bacilli. Besides, as the other symptoms were all so much improved, it was reasonable to infer that the bacilli were gone, or if present, were in very small number. Even presuming that they existed in the lungs, although not raised, there is, and may properly be, in the minds of some of us, a query as to their importance and precise significance as regards prognosis.

Locally, I am confident that the signs have often been ameliorated. In a few exceptional cases in which I have had frequent and long-continued opportunities of watching, the diseased processes have unquestionably become entirely quiescent. Many times moist râles limited to the apices have become fewer. Occasionally they have disappeared entirely. Under these circumstances I have been uncertain whether or not areas of softening at the apices had become cicatrized. In view of other attendant conditions and symptoms, which were

at the same time much improved, the more favorable judgment seems also the more probable one. In making this statement I am erring, perhaps, on the side of too great conservatism, rather than on that of over-confidence. The breathing, after several months of continuous medication, has often become less harsh and high pitched, and the area of consolidation distinctly smaller. I base this affirmation upon the evidences afforded by auscultation and percussion. In such instances not only was the breathing softer and more vesicular, but the note obtained by percussion had become less dull and the wooden return more limited in extent. In certain instances, when cavities were surely present at the apices, I have been convinced, after a while, that the areas in which loss of tissue was obvious had contracted in a marked degree, and accompanying this contraction all physical evidences of local disease were somewhat favorably modified. Whether or no the contraction of cavities be due to the increased formation of fibrous tissue, I am not prepared absolutely to decide. This opinion, however, which is intelligent, appears to me, also, highly probable.

Many of my patients before taking the creosote treatment had made a thorough trial of other approved methods. The rule was that they had already taken, unsuccessfully, cod-liver oil, the hypophosphites, malt, arsenic, and strychnine. Now and then I have known of or met a patient who had been placed in Williams's Pneumatic Cabinet, or had been subjected to Weigert's plan of hot-air inhalation, or had been fed with the stomach-tube after Debove's plan, or received injections per rectum with sulphuretted hydrogen. In some of these, when the treatment later with creosote had been continued a sufficient length of time to test it, a conviction was established in their minds that they had finally taken hold of what was most serviceable to them. Even now, when "tuberculin"¹ or "parataloid" injections seem to hold under their sway the minds of a few of our best clini-

¹ Or, indeed, the latest *trouvaille*, viz., tuberculicidin, or modified tuberculin.

cians, I remark with more than curiosity that creosote is given internally, though injections of the former are at the same time being made. This appears to me very faulty from a rational point of view. If there be any real benefit resulting from the Koch fluid, or its improved modification, let us find out as soon as we can just what and how much this benefit is. How can we do this unless we abstain from other modifying treatment of more or less value.

In regard to corroborative cases of my statements I would refer those who wish to consult them to my original paper. With respect to other and newer cases I will gladly read, at the end of this communication, if the Society desires it, from the notes on one or more of those persons who have latterly been under my care. But I will not in this place destroy the unity of my reading by interpolating them.

What are the drawbacks, what the contra-indications in the use of creosote? Does it ever work harmful results? The objections to the use of creosote are few, and if any occur, they are usually obviated by a little judgment and good sense. Occasionally the stomach becomes intolerant. This is shown either by headache, inappetence, and a sluggish feeling in the performance of usual duties; or there is slight pain or uneasiness in the region of the stomach, evidently brought on by the action of creosote. These ill-effects are frequently occasioned by a too rapid increase of the dose, by a faulty method of administration, or by some evident personal idiosyncrasy; or, indeed, the true explanation is simply that there is an irritative or weak stomachal condition connected with the presence of tubercular deposit in the lungs and dependent on catarrhal gastritis, or a possible atrophy of the gastric tubules. The remedy of this state is not far to seek. Diminish the dose of the remedy for a time, or in extreme cases interrupt its use for a while, and resume prescribing it in small and slowly increasing doses, and more frequently repeated, only after a period of complete rest from taking it. If diarrhoea be occasioned by its use, the same rules apply, or, indeed, an appropriate

opiate may be added in small amount to each dose with good effect, so far as toleration is concerned.

In a late number of the *American Journal of the Medical Sciences* the reporter for the *Journal*, in commenting upon Dr. William H. Flint's able article, seems to fear the injurious effect of creosote on the kidneys. In only a few instances have I had my fears aroused in this direction, although my attention has long been awakened to its rare occurrence. Usually the ordinary tests for creosote do not show its presence in the urine. It has been found there, however, and it is therefore conceivable that it may irritate the kidneys at times in a pronounced manner. I do not believe, after careful watching, that this will often take place, unless large and frequent doses of the drug be given. It is true that under these circumstances I have recognized a passing albuminuria, which disappeared when the amount of creosote taken by the patient was diminished. I think it is wisdom, in view of such facts, to be on one's guard and to examine the urine carefully every few days, at least, when the patient is taking large amounts of creosote.

Is it a contra-indication to the use of creosote when renal disease already exists? In reply, I would say that under these circumstances I have given creosote and have observed no ill effects from its use, although it is true I have not been willing to increase the dose beyond six or eight minims in the twenty-four hours. In so doing I believe I have acted prudently and wisely.

In regard to hæmoptysis is there any reason to believe that the use of creosote occasions hæmoptysis, or makes patients more liable to it? According to Dujardin-Beaumez, creosote in appreciable doses, and while it is eliminated from the body by way of the respiratory organs, congests the bronchial mucous membrane and thus promotes the occurrence of pulmonary hemorrhage. According to him the drug is strongly contra-indicated whenever hemorrhage actually occurs. Nothing in my experience thus far tends to corroborate this view. It seems to me prudent, however, to recognize the possibility of what Beaumez affirms, and for this reason to in-

errupt the use of creosote during the time there is hæmoptysis, or an evidently imminent tendency to it.

In regard to the creosote itself, it is all-important to make use of the genuine wood creosote, and particularly of the creosote obtained from the beech-wood, and to employ no other. Even now, and although attention has been directed to the regrettable fact by me, much so-called creosote that is dispensed is nothing but impure carbolic acid. Consequently evil, not to say poisonous, results are not infrequently obtained when we had a right to anticipate great amelioration, if not cure, supposing the pure drug had been taken. To prove the great importance of my statement, and to avoid all misapprehension, I refer my readers to an article by Dr. G. W. Dagwait, entitled "Impure Creosote the Cause of Failure in the Treatment of Pulmonary Tuberculosis," and published in *The Occidental Medical Times* for June, 1890. As to the preparation which is most eligible, I still believe the formula which I borrowed from Jaccoud, and which he apparently took from Bouchard and Gimbert, to be most generally useful. Still there are cases when the solution of creosote in whiskey with glycerine apparently agrees less well with the stomach than an emulsion with cod-liver-oil and the hypophosphites, or a mixture with wild cherry and gum, with or without a small quantity of morphine. The emulsion is now used preferably at St. Luke's Hospital, and I believe the formula for it was taken from Dr. W. H. Flint's article in the *New York Medical Journal*, July, 1890. The combination with wild cherry seems rational, and is employed by an eminent practitioner of a neighboring city.

With respect to the quantity of creosote to be used daily, opinions differ. My own judgment is to give small quantities at a dose, from a half to one minim, as a rule, and to increase its frequency gradually from three to four times daily to every two hours, if the stomach does not become intolerant. Of course there are instances in which I have deviated from this rule, and have carried the amount of creosote, with obvious advantages for a while, to twenty or twenty-five drops in twenty-four

hours.¹ But I have very rarely been able to hold my patients at this dose for any length of time without some intercurrent objectionable symptoms arising which made me desist from increasing the dose, and usually made me diminish the quantity of the drug, or stop its use altogether for several days. Stomachal or intestinal disturbances, headache and general malaise, slight albuminuria, or hæmoptysis, have been symptoms which have thus guided my action.

I am well aware that my experience is not that of other observers. I know, indeed, the views of Sommerbrodt and Gutmann and Beaumetz and others, but I have not been convinced by their statements. I explain my lack of belief in them, as applied to my patients, because I have found that the American stomach will not, for one reason or another, bear as much creosote as is given across the water. Besides, I do not believe that the theory which upholds the use of creosote mainly on account of its obvious anti-microbic action is the one that is most satisfactory in explaining its effects in favorable cases, and therefore it is that I have never sought to make the blood-serum in a living individual, by reason of the quantity of creosote carried in it, capable of killing the active bacilli. This being the case I have not sought ways of reaching the lungs other than by the stomach, as the rectum or the subcutaneous tissue. The first way open to us, viz., the rectum, cannot but be a temporary makeshift and presents no advantages over stomachal medication, except in a few instances when the stomach having become intolerant we do not wish to interrupt the medication altogether. As to the use of subcutaneous injections of creosote in sterilized olive-oil, I can only say that I have not been able to recognize its advantages except in regard to the larger quantity of creosote that it is possible to administer in this manner. As I do not regard this as desirable, especially when the drug should be ad-

¹ In one case under my care at present, as much as sixty-four minims of creosote has been taken daily by the mouth without any unpleasant or injurious effects. Such a case, however, is exceptional, and must not be regarded as a standard ordinarily.

ministered for many months, not to say years, I am very sceptical in regard to its permanent and decided value. Still, I am forced frankly to add that this is the way toward which modern research inclines, not only for this drug but for several others now being used in the curative treatment of pulmonary phthisis (*i.e.*, gold, tuberculin, etc.). When compared as to its value with inhalations of hot air, of fluorhydric acid, of aniline (and also its internal use), of injections of gold, goat's milk, etc., of "lavage and gavage," where does creosote stand? Evidently it is superior to them all, if the concurrence of good medical thought and experience be the judge, and if the duration of the time during which it has held the favor of well-balanced, careful, and judicious observers be the test of any treatment.

What do we see to-day in the hospitals of New York—at the New York Hospital, at St. Luke's, Bellevue, the Roosevelt, Mount Sinai, Charity? Creosote is given by both visiting physicians and house staff with undiminished faith and in increasing quantities. I have yet to meet a practitioner who has carefully made use of it who has not some faith in its curative virtues. I have assuredly met a large number who feel we have in creosote to-day the best and most available medicinal remedy known to physicians in the treatment of pulmonary phthisis.

Is creosote only to be given by the mouth? Is there no other channel by which it can be introduced into the economy with resulting advantages? In my opinion frequent and long-continued inhalations of creosote are extremely useful and should almost invariably be regarded as a very important adjunct of the internal administration. These inhalations when properly and systematically employed will unquestionably at times occasion positive and remarkably good results. In some instances of very obstinate and distressing cough they diminish its intensity and frequency very much. I have known this to be true when the internal administration had failed to do it in such an evident manner, or to the same degree, when unaided with this additional curative means. Repeated inspections of the laryngeal mucous membrane while treat-

ment was continued have proved to me beyond a question that the larynx is at times very favorably modified by these inhalations. I have seen the mucous membrane which was extremely inflamed and thickened become almost of normal coloration, and I have sometimes thought that œdema and ulceration were modified advantageously. I know, even now, of no more practical method of continuous inhalation than the use of the perforated zinc inhaler, which in the hands of myself and others has proved so very useful. The ease with which inhalations are thus conducted, and the fact that few, if any, evil effects can result even from their injudicious use are strong arguments in their favor. Theoretical and even experimental objections have little importance, to my mind, in opposition with what I have so often observed in the treatment of patients. These may now be counted by the hundreds, and are always, of course, steadily increasing in numbers.

Latterly, in such appropriate cases of simple catarrhal inflammation as I have been able to treat in my office, I have made use of vapor inhalations from Beseler's globe inhaler. This method I have found more satisfactory during the past winter, as I have controlled a sufficient amount of air-pressure, thanks to the Edison electric plant, to make the inhaler work satisfactorily. I am of the opinion, as stated elsewhere, that these inhalations may prove to be of great remedial service whenever they are followed up assiduously and regularly. I only gave up their employment for a time on account of the practical difficulties in the way of obtaining benefit from them. Hereafter I hope these will be sufficiently removed for me to recur to them frequently. In tubercular phthisis such inhalations must be helpful in addition to those which are taken with the perforated zinc inhaler, mainly for the reason that the vapor is formed under considerable pressure and enters the lungs in greater volume and with greater power of penetration than when the air which is drawn through the sponge of the ordinary inhaler enters the respiratory passages. I have employed many different substances in inhalation by means of the zinc inhaler, but for phthisis pulmonalis I know of none

so satisfactory as creosote. It must be combined with alcohol in the proportion of one part to eight, or it would be too irritating for the throat and could not be used continuously. When I say continuously I do not mean that the inhalation of creosote should be used all the time, but I do mean that little by little the duration of the inhalation and the frequency should be increased. Finally, the inhaler can often be worn hours at a time with comfort and advantage; but this end must not be reached too soon, and if such an attempt be made, in many instances failure results and the patient complains of irritation of the throat and beginning of the respiratory tract.

When the inhaler is worn by degrees a longer period of time it often affords comfort and relief. The amount of inhaling fluid poured on the sponge of the inhaler is usually about fifteen or twenty drops. More than this amount does not work so well. Always begin inhaling by wearing the inhaler a short time, and little by little increase the duration from a few minutes—say ten or fifteen—to half an hour, an hour, or more. The proportion of creosote to alcohol in the inhaling fluid is, as I have stated, ordinarily one drachm to the ounce. Of course this amount could be increased or diminished, but as a fact this proportion is most satisfactory. The worst results which can occur from inconsiderate use of the inhaler are to produce throat irritation at times, or to burn the lips slightly, if the sponge attached to it is brought in contact with them. There are some other details which I could mention in regard to the creosote treatment, but I refrain from doing so because I do not wish to monopolize too much time, and because I am well aware that most of what I have read is familiar to many who are listening. What I desire is to hear a very interesting and important topic properly discussed, and to have an excellent treatment receive due consideration as to its merits from prominent and able men of this Section. If I have praised the creosote treatment too much, I wish to be told so.

If I have merely voiced the prevailing convictions

of those present, I would like to hear them from their own lips. In any event nothing but good can come, in my belief, to a vast number of unfortunate sufferers from establishing the creosote treatment of pulmonary phthisis on a reasonable and assured basis.

The following note from my late house physician, Dr. L. F. Bishop, seems to me of considerable importance in connection with my paper :

" ST. LUKE'S HOSPITAL,
" FIFTY-FOURTH STREET AND FIFTH AVENUE,
" NEW YORK, November 18, 1891.

" MY DEAR DR. ROBINSON : Over fifty patients of the House of Rest for Consumptives have taken the enteric pills of creosote of Dr. William H. Flint, in doses of from six to fifteen daily. The pills have been, almost without exception, well borne. A few cases of diarrhœa, which were at first attributed to the pills, were probably due to other causes. We began to use the pills about September 1st, and now use them to the exclusion of the creosote mixtures.

" L. F. BISHOP."

The following is a letter received by me from Dr. E. L. Trudeau, of Saranac Lake, N. Y. :

" November 17, 1891.

" DEAR DR. ROBINSON : In regard to my personal experience with creosote in the treatment of pulmonary phthisis, I can only say that after watching the results of its exhibition for three or four years I have not lost confidence in its usefulness. Its value, in my opinion, is due not to any direct germicidal influence which it may exert on the tubercle bacillus, but to its efficacy in correcting fermentations of the digestive tract, so common in this disease, thereby improving appetite, digestion, and nutrition, and also to the beneficial influence it exerts on the secondary, inflammatory, and suppurative processes in the lung, which accompany the deposit of tubercle to a greater or less extent, and constitute so formidable an element of pulmonary phthisis. Thus far

it has been truthfully said, the tubercle bacillus 'bears cheerfully' a degree of germicidal medication which may prove injurious to its host, and there is no proof that creosote differs in this respect from other germicides. This view seems to derive support from experiments made by others and by myself upon tubercular animals, in which the tubercular process is seen to be entirely uninfluenced by the largest doses of creosote given daily hypodermically. Clinically, however, the drug does seem to increase appetite, to improve digestion and nutrition, and to diminish cough and expectoration.

"In prescribing it, therefore, cases in which the digestive tract is at fault, or in which the inflammatory and suppurative processes are most prominent, should be selected rather than those in which the physical and rational signs point to a purely tubercular process.

"The best method of administering it is usually by the stomach, in capsules containing two drops of pure creosote to four grains of subcarbonate of bismuth, one to three capsules being given after each meal, according to the tolerance of the individual. In some cases, however, it seems to disorder the stomach, and cannot be exhibited in sufficient quantities to be effective. In these cases I have found the administration per rectum to leave the stomach free, and answer every other indication. Much larger doses can be given in this way, twenty to thirty-five drops of pure creosote may be mixed, according to the French method, with one to two ounces of almond oil, and beaten up gradually with the yolk of one or two eggs, subsequently thinned a little by the addition of a few drops of water, and injected on retiring, two or three times a week.

"The patient tastes the drug within a few minutes of its administration, and its odor can be detected before long in the breath.

"Creosote seems to be withstanding the test of time, and it may be said to be perhaps more useful than any other drug in combating a disease, the drug treatment of which has ever proved most unsatisfactory.

"E. L. TRUDEAU."

The following is a letter from Dr. W. C. Glasgow :

" ST. LOUIS, MO., September 30, 1891.

" MY DEAR DR. ROBINSON : In reply to your inquiries about my experience with creosote in pulmonary disease, I would say, after using the American, German, and French creosote, I find that the English (Morson's B. Creosote) is the best creosote for internal use. In many cases where druggists have substituted other makes of creosote for the English, I have detected the substitution by the bad effect. Creosote is like whiskey, the older it is, the better it is tolerated.

" To creosote a patient, it is necessary to give it in the largest doses which a patient can take without producing disturbing symptoms. This I call the point of tolerance. Individuals vary in the amount of creosote they can take, or in the point of tolerance. For some a dose of five drops is the maximum ; others can take twenty to thirty, and one case is now taking thirty-seven drops three times a day. As a vehicle, I give preference to milk ; next this, California port wine.

" I usually commence with two drops, dissolved in two drachms of whiskey, and this is added to a glass of milk ; this dose is given after meals twice daily. Every third day the individual dose is increased by two drops, and this is continued until the point of tolerance is ascertained ; when gastric distress is evident, the remedy is discontinued for two days, and on the third day it is recommenced with a dose two drops less than the one which produced the disturbance. When milk does not agree with the patient, I use California port wine and dilute freely with water. With these forms of vehicle I find the patient can take creosote for several months continuously without distress or disgust. The glycerine mixtures used for a length of time here have not proved as acceptable to the patient.

" In addition, I use the creosote inhalations made by adding creosote to hot water. This I much prefer to the dry inhalation, also the creosote ointment with vaseline as a base. In miliary tuberculosis and generally dissemi-

nated tuberculosis I have seen no benefit from its use. In fibroid phthisis its effects have not been marked. In phthisis I have found great benefit. In the first stage it almost always improves the condition, removes symptoms, and increases appetite, weight, and strength. In the second stage there is often great improvement, with changes in the symptoms and physical signs which show the tendency toward an arrest or chronicity of the disease. In the third stage equally satisfactory results are not so frequently obtained, but even here the change of the physical signs is seen, showing the tendency to arrest; the fluid gurgling becomes dryer, and in many cases the symptoms, such as fever, sweats, and cough, are greatly improved. The expectoration is very frequently diminished or checked.

“The best and most marked effect of creosote is seen in the chronic stage of cellular infiltration of the lungs, a condition which I described in the March No., 1889, *American Journal of the Medical Sciences*, and which has been lately noticed by Finkler, of Bonn, in his last work on ‘Infectious Pneumonias.’ These cases are often mistaken for tubercular cases, and to our great astonishment we find an unfavorable prognosis not sustained.

“I believe that we have in creosote a remedy which defertilizes the lung tissue and renders it an unfavorable soil for the growth and development of micro-organisms. It is also an excellent expectorant. Combined with other measures to promote nutrition, it seems to me to be the best remedy which we have up to the present time to favor an arrest of many forms of tubercular disease.

“Yours truly,

“W. C. GLASGOW.”

