

Norris (H. S.)

PHTHISIS:—A NEW METHOD OF TREATMENT.

The Internal Administration of
Ozone in the Treatment of
Phthisis. Report of
Cases.

BY
HENRY S. NORRIS, M.D.,
NEW YORK,
VISITING PHYSICIAN CITY HOSPITAL.

REPRINTED FROM THE
New York Medical Journal,
for November 5th, 1892.

J. C. DITTRICH.

FACTORY, N. 11TH & BERRY STS.,

BROOKLYN, N. Y.



*Office, 22 E 23rd St
New York*

*Read before the Hospital Graduates' Club,
April 28, 1892.*

THE INTERNAL ADMINISTRATION OF
OZONE IN THE TREATMENT OF PHTHISIS.

REPORT OF CASES.

BY HENRY S. NORRIS, M.D.,
VISITING PHYSICIAN, CHARITY HOSPITAL. NEW YORK.

IN a paper entitled "Prevalence of Consumption in the United States," read before the Academy of Medicine in New York, by Dr. John S. Billings, of the army, on January 28, 1892, he gives some statistics of consumption taken from the eleventh census (1890). During that year there were 101,645 deaths from this cause, being a little over 1.6 in 1,000 of living population. From reports from districts where the registration of deaths is accurately kept, the death-rate is so much higher than this that allowance must be made for districts where registration is neglected or imperfect in estimating the extent of phthisis in this country. "From these data," continues Dr. Billings, "it is quite safe to assume that the number of deaths due to pulmonary phthisis in the whole country during the census year was over 125,000. If we estimate the average duration of the disease as two years, we shall have two cases in existence for every death." At this rate of calcula-



tion, we have now in the United States alone over 250,000 cases of pulmonary phthisis. Is it any wonder that the number of remedies that have been recommended for this disease is almost infinite? It seems almost a presumption to add to the list; but after several months' trial of ozone in my wards in Charity Hospital, I have become more than favorably impressed with it, and I think that the history of my cases will not prove unprofitable, and may lead others to venture, with more or less confidence, to add their experience to mine.

In November, 1891, my attention was called to a preparation of ozone called Aqazon, which is a two-and-a-half-volume per cent. solution of ozone in water, the stability of which is maintained by the presence of a certain amount of hypophosphites. I was induced to take some to the hospital and try it for the night-sweats of phthisis. I had in my wards at the time some fifteen or twenty cases in all stages, and from the number selected two for the experiment.

They were both in young women of about the same age, both confined to bed; had been on creasote and cod-liver oil, and were receiving extra diet. They presented nearly the same phenomena, Case II being further advanced than Case I. I began cautiously with the first case, as I had very little confidence in the remedy, and it was not until after two weeks that I ventured to use it on the second case.

CASE I. *Catarrhal Phthisis*.—Annie Q., aged twenty-one, single, United States; admitted to hospital November 6, 1891. Family history good. Has had a cough for a year, and has been a patient in Bellevue and in Charity Hospital once before,

whence she was discharged October 20th. Has lost flesh, and has heavy night-sweats. Cough worse at night and in the morning. Sputum thick and abundant. Has fever in the afternoon, and is confined to her bed. Physical examination showed bronchial breathing, voice and whisper over right upper lobe in front and behind, with râles after coughing.

On November 8th she was put upon Aquazon, ozonized cod-liver oil, and iron. The Aquazon was given in four doses of three ounces each, one before each meal, and the fourth at bed time. The oil, containing six volumes per cent. of ozone, was given—half an ounce after each meal. The diet was not changed. In a month the bronchial breathing had almost disappeared, cough and night-sweats had stopped, the patient had gained in weight, and was up and about the ward. She left the hospital December 23d, with only traces of the disease remaining.

CASE II. *Catarrhal Phthisis*.—Lillie S., aged eighteen, single, United States. Admitted to hospital November 10th. Tubercular family history. Has been confined to her bed for a month. Has had a cough for a year, and one attack of hæmoptysis. Has had night-sweats and fever for past three months; worse during past two months. Coughs worse at night and in the morning. Sputum thick, sticky, and abundant. Has lost a "good deal" in weight. Present condition: Patient pale, thin, but not emaciated. Skin hot and dry; respirations hurried. Physical examination revealed consolidation of the left upper lobe, with a profusion of moist râles. Evening temperature runs from 101° to 103° , and is above normal in the morning. Treatment

on entering hospital, creasote, cod-liver oil, and extra diet. On November 23d her condition was practically unchanged. She was then put upon Aquzon, twelve ounces a day, and ozonized cod-liver oil, half an ounce three times a day. The first effect was the lessening of the frequency of the cough and the quantity of expectoration. The night-sweats ceased, her appetite increased, she began to pass comfortable nights, and in two weeks she was out of bed. At the end of three weeks there was a perceptible gain in weight, and she had almost ceased to cough and expectorate. She was discharged at her own request on December 14th. At this time there was still bronchial breathing over the left upper lobe, but it was tempered with a vesicular quality, and the râles had almost disappeared.

These two cases convinced me that I was dealing with a powerful and useful agent. The rapid and immediate improvement following the administration of these preparations of ozone encouraged me to continue the experiment. I began at once to apply it to various forms and stages of phthisis—from the mild cases with recent consolidation, to those with cavities and tubercular diarrhoea. I did this with the object of discovering, if possible, what the limits of utility were; to find out what classes of cases responded to the treatment, and to notice its effects even upon those where any treatment must be useless. The remedy was always given in the same manner, viz. : Twelve ounces of Aquzon a day in four doses, one before each meal, and the fourth at bed-time. An ounce and a half of ozonized oil, being half an ounce after each regular meal. It was not used in all the cases in the wards. Others were kept upon creasote and cod-liver oil in order to

compare the two plans ; but those upon the ozone seemed to do so much better than the others that I was frequently besought by these to be put upon the new treatment.

The history of the remaining cases is as follows :

CASE III. *Catarrhal Phthisis*.—Annie S., aged twenty-six, Ireland, widow. Admitted December 7, 1891. Family history good. Has been sick about four months. In September, 1891, had severe chills and fever, which lasted three weeks. Weight before this, one hundred and eighty pounds. During this period "took cold," and in October, 1891, took to her bed on this account. Has a bad cough, worse at night and in the morning, with a thick and profuse nummulated sputum. Has drenching night-sweats, and has lost a great deal in weight. Patient too ill to be weighed. Probable weight, one hundred and twenty-five to one hundred and thirty pounds. Condition at time of admission : Thin, but not emaciated. Is very pale, except at times when she is flushed. Temperature ranges from 100° A. M. to 103° P. M. by the mouth. Physical examination shows consolidation of the left upper lobe, with a profusion of large and small mucous râles, but no cavities. On December 17th she was put upon Aquazon and ozonized cod-liver oil, as in the other cases, the previous treatment having been creasote and cod-liver oil. At the end of two weeks the morning temperature became normal and remained so, except on one occasion, when it reached 100°. After January 22d, or about five weeks after ozone was begun, the evening temperature came down to normal, and has rarely been above that since. Since then the cough and expectoration have almost entirely ceased, and the patient has been up assisting in

the work in the ward. The weight has increased to one hundred and forty-six pounds.

March 24th.—Physical examination revealed increased voice sounds over upper half of left lung, but no bronchial breathing or voice and no râles. A few râles were heard in right suprascapular region. Patient still under treatment.

CASE IV. *Catarrhal Phthisis.*—Agnes M., aged twenty-four years, Ireland, married. Family history good. Has five children, youngest four years old. Admitted to hospital December 22, 1891. In March, 1891, she had the "grippe," since which time she has had a cough. Had a hæmorrhage in June, 1891, and even now occasionally "spits a little blood." Has night-sweats, and has lost a good deal in weight. On admission patient is pale, thin, but not emaciated. Cough troublesome, and expectoration thick, lumpy, and abundant. Physical examination revealed an area of bronchial breathing in left axillary region, extending down to inframammary line. Up to February 2, 1892, the patient had been taking creasote and cod-liver oil and Blaud's pills, but her condition remained practically unchanged. On that day Aquazon and ozonized oil were begun, and the iron continued. At the end of three weeks the night-sweats had ceased, the cough and expectoration had markedly diminished, and the pure bronchial breathing had assumed a distinctly vesicular quality. The râles were less numerous, and the pallor of the patient had given place to a slight tinge of color. This patient had been under treatment from December 22d to February 2d, with practically no change in her condition. On this date ozone was begun, and her improvement was at least coincident with its administration. On Febru-

ary 19th she asked permission to return to her family, and a few days after was discharged.

CASE V. *Catarrhal Phthisis, with Cavity*.—Rose McQ., aged twenty-seven, Ireland, widow, domestic. Admitted January 4, 1892. Family history phthisical. Was never ill until three years ago, when she had the "grippe." Since then she has had a cough. Two months ago she became much worse; began to have night-sweats, pains in her chest, and at times spat up blood. She has lost much flesh, and can sit up only part of the day. On admission she is very thin, though not to emaciation. Coughs a good deal, and expectorates a quantity of characteristic sputum. Physical examination revealed a cavity with gurgles in upper part of right lung, anteriorly, with a considerable area of consolidation about it, and a profusion of large and small mucous râles extending to the base of the right lung. When first admitted she was put upon the creasote treatment, as in almost every case when first entering the hospital. This was continued until January 18th, when the ozone was begun. On this day the record reads: "Slight night-sweat; expectoration profuse; temperature, 100.8° A. M.; 100.4° P. M." From this time the temperature ranged lower, never rising above 99°, except about February 4th, when, after "taking cold," she passed five or six poor days. From this time she continued to gain in every way, and on February 17th the nurse records: "Patient much better; cough and expectoration less; appetite good; rests well at night." She continued to improve up to the time when she left the hospital on March 16th. She had gained in weight, had not had a night-sweat for three weeks, slept and ate well, and cough and expectoration were both lessened.

The physical signs shortly before she left showed great diminution of râles over lower part of right lung; and though the amphoric breathing at the apex persisted, the gurgles and other liquid sounds had disappeared.

CASE VI. *Catarrhal Phthisis*.—Elizabeth C., aged fifty years, Ireland, married, domestic. Admitted January 8, 1892. Family history good. Was never sick until three years ago, when she had pneumonia. Has had a cough since that time, but since four months it has become much worse, and is accompanied with fever and night-sweats. Condition on entering hospital: Patient thin, almost to emaciation, but still has pretty good strength, though confined to bed. Has consolidation of whole of right upper lobe, with a few râles, increased by coughing. Aquazon and ozonized oil were begun on January 18th. For a time her cough and expectoration diminished, and she began to improve, to eat and sleep better. But suddenly the process became more active; tubercular pneumonia developed in both upper lobes, and it became evident that her strength could not stand the strain much longer. When I went off duty she was still living, but a fatal termination was inevitable.

CASE VII. *Catarrhal Phthisis*.—Mary K., aged twenty-one years, single, United States. Brought to hospital in the last stages of phthisis. Emaciation extreme, and it was only with difficulty that bed sores could be prevented. Aquazon was given with the hope of relieving the teasing cough and expectoration, which it seemed to do for a time. The lungs were so riddled with cavities that nothing could be expected from any treatment, except so far as it should relieve her distress and make her comfortable.

This patient died about two weeks after admission. My object in using ozone in this case, and in another equally hopeless one, which will be mentioned later on, was to see if, in such an extremity, the relief from the desire to cough, and the diminution in the quantity of expectoration that had followed immediately in all the other cases, would not occur under these circumstances. I found that it did at the beginning; but the general condition of the patient was so bad, and she suffered so much from other and even more distressing symptoms, that the benefits of the remedy were not very apparent.

CASE VIII. *Catarrhal Phthisis*.—Charles McC., aged forty-eight, Ireland, widower, waiter. Admitted December 4, 1891. Family history good. Had pneumonia four years ago. Pleurisy three years ago. Otherwise has never been ill. Weight before present illness, one hundred and fifty-five pounds. Has had a cough for three or four weeks. Cough hard and dry, and is accompanied with weakness and shortness of breath. Coughs more in the morning. Condition on entering hospital: Patient pale, nutrition fair; weight, one hundred and thirty-eight pounds. Has fever every day. Physical examination revealed bronchial vesicular breathing, bronchial voice, and small mucous râles in left supraspinous region.

Treatment.—Cod-liver oil and creasote until January 5th, when, there being no improvement, Aquazon and ozonized oil were begun in the usual way. For the first two weeks his temperature ranged from 99° in the morning to 100° to 101.4° in the evening, on only one occasion being normal. The next two weeks it became normal at times, but was usually one or two degrees above. After that time his tempera-

ture became normal, and remained so, except at rare intervals.

March 24th.—His cough is entirely gone, and the lung is free from adventitious sounds. His weight has increased to one hundred and fifty pounds. He was discharged at his own request, as he felt well enough to return to work.

CASE IX. *Catarrhal Phthisis.*—Martin K., aged twenty-five years, single, Russian, laborer. Admitted November 30, 1891. Was taken ill with a "cold" in March, 1891. Has had a cough and almost nightly sweats since then. Six months ago had spitting of blood for two months. This was of a dark color. Present condition: Has a severe cough with abundant expectoration, pain in the chest, and has had diarrhœa for three months. Has been confined to his bed for two months. Is very pale, but fairly well nourished. Physical examination reveals spots of consolidation in both upper lobes posteriorly, characterized by broncho-vesicular breathing and bronchophony, and pleuritic friction over same area.

January 7th.—Patient has been upon creasote and cod-liver oil, with remedies for diarrhœa. He is still in bed, and seems in a bad way. To-day Aquazon and ozonized oil were begun, with salol for diarrhœa. His temperature was usually about 100° in the afternoon, but was normal in the morning.

He was out of bed for the first time on January 27th, and diarrhœa had stopped by February 5th. When he was first admitted he was too ill to be weighed, but he has evidently put on a good deal of flesh, and weighed, March 17th, one hundred and forty-five pounds. His temperature has become normal, and has remained so, although he still has night-sweats about twice a week. On March 24th, physi-

cal examination: Absence of broncho-vesicular breathing and bronchophony, but voice sounds were still intensified over upper part of *left* lung behind. Friction sounds still persistent. He coughs only a fraction of what he did, and the expectoration is very limited. Since writing the above he has asked for his discharge, so that he can go back to work.

CASE X. *Catarrhal Phthisis, with Cavity*.—Charles W., aged forty-two years, married, England, laborer. Admitted February 9, 1892. Father died of phthisis; otherwise family history negative. He had a cough for about a year, and has twice before been an inmate of this hospital. He returns in very poor condition. Has dyspnoea on exertion, and is rapidly losing flesh. Has night-sweats. Had two hæmorrhages in April, 1891. Condition on admission: Pale, thin, though not emaciated. Physical examination revealed consolidation of right upper lobe, which also contained a cavity. Previous treatment: Creasote, under which he improved, and left the hospital in December, 1891. Aqazon and ozonized oil begun February 25th. Weight, one hundred and thirty-five pounds, but, diarrhoea supervening, it ran down to one hundred and twenty-eight pounds on March 17th. He regained this afterward.

Present Condition, March 24th.—Weight, one hundred and thirty-one pounds. Has shortness of breath, and less cough and expectoration. Physical signs practically unchanged. At the beginning he seemed to be improving, but at the last examination it was evident he was losing ground. He is still under treatment.

CASE XI. *Catarrhal Phthisis*.—Carlos Fidi, aged thirty-two years, Italian, laborer. Admitted December 23, 1892. The patient was in the last stages

of the disease. Emaciated, lungs riddled with cavities, and with tubercular laryngitis. Ozone was given him for the cough and expectoration, which it relieved and diminished, much more markedly than in the case of the woman (Case VII.) in about the same condition. His case, however, was a hopeless one, and he died one month after admission.

CASE XII. *Catarrhal Phthisis, with Pleurisy and Bronchitis*.—William C., aged twenty-two years, single, Ireland, laborer. Admitted December 29, 1891. Family history good. Present trouble began six months ago; has been worse for past few weeks. Has severe cough, dyspnoea, and pain in the chest. Cough worse nights and mornings. Physical examination revealed consolidation of upper part of both lungs, with pleurisy and extensive bronchitis below. He was first put upon creasote and cod-liver oil, and then upon Aquazon and ozonized oil, but no change took place for the better. The disease progressed until he was obliged to take to his bed, and finally asked to be allowed to return home. He left the hospital in worse condition than when he came in.

CASE XIII. *Catarrhal Phthisis*.—Charles B., aged twenty four years, Ireland, married, driver. Admitted November 27, 1892. Family history good. Has been ill for three years. Two years ago was a patient in this hospital with phthisis. Lately his cough has increased, and he has dyspnoea, night-sweats, and fever. Physical signs show both upper lobes are consolidated, and are beginning to break down. Cod-liver oil, creasote, and remedies for night-sweats were given until January 4, 1892. His condition steadily grew worse, and he was on that day put on the ozone treatment. At the end

of four weeks his cough and expectoration had been favorably influenced, but, in the main, his condition had steadily become worse, and he asked leave to go home. He was discharged February 2d. In this case, as in Case XII., the disease was too extensive and too far advanced to admit of any improvement under the circumstances.

CASE XIV. *Fibroid Phthisis*.—James McT., aged fifty-three years, Ireland, widower, laborer. Admitted February 8, 1892. Family history unimportant. Has had a cough for three years, worse for last six months, during which time has lost about thirty pounds. Has never had fever or night-sweats. On admission, patient is pale and complains of dyspnoea on exertion. Physical examination revealed bronchial breathing, and voice extending from apex to base of left lung behind, with fine râles throughout. Ozone was begun on February 12th, four days after admission. The cough and dyspnoea subsided rapidly, and he was able to sleep the entire night. On March 24th the examination revealed the fact that the pure bronchial breathing extended only to angles of the scapulæ, below which point it had a distinctly vesicular quality, with abundance of small râles. This patient improved markedly, and gained thirteen pounds in weight; but his age, and the character and extent of his disease, preclude the possibility of his recovery.

CASE XV. *Catarrhal Phthisis*.—Emily L., aged twenty-six years, single, United States, dressmaker. Admitted February 14, 1892. Part of family died of phthisis. Part now living and healthy. Has always been subject to coughs. Present trouble began three months before admission. Cough severe, sputum thick and nummulated. Has night-sweats,

and has lost fifteen to twenty pounds in three months. Two months ago had hæmatemesis, and was under treatment for gastric ulcer. Present condition: Very anæmic, but fairly well nourished. Physical examination revealed slight consolidation at right apex, characterized by bronchial breathing and bronchophony.

Treatment.—Cod-liver oil, compound syrup of hypophosphites, iron, and for the sleeplessness present, sulphonal. This treatment was carried out until March 19th without much change in her condition. On March 17th her weight was one hundred and thirty-three pounds and a half. On the 19th ozone was begun in the usual manner. On March 30th the record says: "Cough and expectoration less, and patient eats and sleeps well; weight, one hundred and forty-three pounds and a half." Physical signs were somewhat modified, but the bronchial breathing remains. Patient still under treatment.

In reporting these cases, I have given both my failures and successes, and I have endeavored to be accurate, without going too much into detail. It is no part of my desire to bring forward a specific for pulmonary tuberculosis. There is, in all probability, no such thing in existence. I simply wish to add to the therapeutic measures at our command another, that has seemed to me to be worthy of further investigation. That it has not always succeeded is not to its discredit. Its use has, in some of the cases above cited, at least been coincident with an improvement where none occurred before, and wherein all the incidents and circumstances had been the same, with the single addition of ozone. The repetition of these coincidences offers good reason for giving to this agent at least a fair amount of credit.

If the plan outlined in this series of experiments could be carried still further; if, in addition to less crowding and better food for our patients, we could keep them in an atmosphere containing a certain and constant amount of ozone—the quantity to be determined by experiment—might we not hope for better results than are now attained in ordinary hospital practice? The poor cannot be sent to congenial climates and pure atmospheres, but, by force of necessity, are crowded into hospitals whose walls and floors are too often saturated with emanations from previous generations of unfortunates.

In what way ozone acts when administered by the stomach I do not know. Whether its effects are expended upon the forces of digestion, and in that way influence nutrition, or whether it is absorbed as ozone, I am not prepared to say. But, from its rapid effects upon the secretions in the bronchial tubes, it seems as if it may find its way into the circulation. It is for this reason that I give the ozone water as nearly as possible on an empty stomach.

The cases in which it has proved most successful in my hands have been in persons under thirty-five years of age with catarrhal phthisis, where the disease has not passed far into the second stage, has not been too active, and has been limited to a single lobe, or, if in both lungs, has been confined to comparatively small areas. In every case where these conditions existed the patient's improvement was immediate and progressive.

Of the fifteen cases reported, I cannot say that a single one was cured, but such favorable changes took place that such a result might be expected if the use of ozone could be carried far enough. Of the number reported, two patients, who were in the last

stages of the disease at the time of admission, died. This leaves thirteen in whom benefit was possible. Of this number, five gradually grew worse, and were not favorably influenced by the treatment. All these patients had extensive disease of both lungs. One patient improved while under treatment, but the nature of his disease (extensive fibroid phthisis) and his age (fifty-three) precluded the possibility of complete recovery. In seven cases marked improvement took place—increase in weight, extending to over fifteen pounds in one case; diminution and even cessation of cough and expectoration; termination of night-sweats, and, finally, notable and favorable modifications of the physical signs, amounting in two cases to their entire disappearance.

Of this last group all had catarrhal phthisis. In one instance there was consolidation of a part of the upper lobe of each lung; in one case there was a cavity, and in the rest the disease was limited to one lobe.

The benefits of an atmosphere highly charged with ozone in the *early* stages of phthisis has been noticed by observers for the past thirty years. Can the same benefits be secured by its internal administration, or by inhalation of the artificial product properly diluted, or by both together? The subject is one that is worthy of consideration, and seems to offer great possibilities.

Since the appearance of Dr. Norris' article, and in line with his suggestion of an ozonized atmosphere in this treatment of phthisis, a combination of essential oils with 25 vol. per cent. of Ozone has been perfected, the product being called Aerazol. Aerazol enables the physician to easily administer free Ozone. All information regarding the Ozone preparations may be obtained from The Ozone Manufacturing Co., 47 and 49 Liberty Street, New York.

J. C. DITTRICH,

FACTORY, N. 11TH & BERRY STS.,

BROOKLYN, N. Y.



REASONS WHY

Physicians Should Subscribe

FOR

The New York Medical Journal,

EDITED BY FRANK P. FOSTER, M. D.,

Published by D. APPLETON & CO., 1, 3, & 5 Bond St.

1. **BECAUSE :** It is the *LEADING JOURNAL* of America, and contains more reading-matter than any other journal of its class.
2. **BECAUSE :** It is the exponent of the most advanced scientific medical thought.
3. **BECAUSE :** Its contributors are among the most learned medical men of this country.
4. **BECAUSE :** Its "Original Articles" are the results of scientific observation and research, and are of infinite practical value to the general practitioner.
5. **BECAUSE :** The "Reports on the Progress of Medicine," which are published from time to time, contain the most recent discoveries in the various departments of medicine, and are written by practitioners especially qualified for the purpose.
6. **BECAUSE :** The column devoted in each number to "Therapeutical Notes" contains a *résumé* of the practical application of the most recent therapeutic novelties.
7. **BECAUSE :** The Society Proceedings, of which each number contains one or more, are reports of the practical experience of prominent physicians who thus give to the profession the results of certain modes of treatment in given cases.
8. **BECAUSE :** The Editorial Columns are controlled only by the desire to promote the welfare, honor, and advancement of the science of medicine, as viewed from a standpoint looking to the best interests of the profession.
9. **BECAUSE :** Nothing is admitted to its columns that has not some bearing on medicine, or is not possessed of some practical value.
10. **BECAUSE :** It is published solely in the interests of medicine, and for the upholding of the elevated position occupied by the profession of America.

Subscription Price, \$5.00 per Annum. Volumes begin in January and July.

