

CHAPTER VIII

TUBERCULOSIS

Tuberculosis is assuming more importance every day since the recent antibiotics have become so widely used and bred so many surviving mutants of such high malignancy. Indeed experts have had to return to the old surgical procedures they had discarded in the hope that the new antibiotics would prove sufficient.

The ability of a germ to destroy or assimilate a toxin and even use it to an advantage as a food, does more than simply emphasize its power towards survival. The antibiotics used in practice are amine compounds, and in the hydrazide drugs the amine group's toxicity is raised to the highest pitch. Yet the germ is able to conquer it when it gets a good chance. This recalls that the virus pathogenicity is a function of an amine group in our opinion, and the possibility of a surviving assimilation of a virus and symbiosis therewith is a perfect possibility. The finding of a virus in the tubercle bacillus by Dr. Oswaldo Cruz and Dr. Fontes decades ago is a serious matter. Since the loss of pathogenicity of the Tubercle bacillus follows the action of appropriate carbonyl groups, as does the loss of pathogenicity of the most malignant of viruses, the decision has to be settled if or not the pathogenicity of the tubercle bacillus is due to Oswaldo Cruz's virus.

PULMONARY AND BONE TUBERCULOSIS

The cases presented in this section were used either in the Federal Court trials or before the Federal Trade Commission. The documentation of some of these cases consist of the hospital records from the Herman Kiefer Hospital and the Detroit Tuberculosis Sanitarium. Most of the patients had the best of sanitarium care possible and yet they steadily deteriorated until they were considered hopeless by the authorities. They were given our treatment with curative results. Prolonged bed rest

was not needed and the elimination of the germs followed, leaving sterile areas to be healed. This took place while the patients were able to be active and in some cases they returned to work. The proofs indicate that the germs lose their pathogenicity and the tissues were then able to heal and be replaced by normal functioning tissue with a very minimum of scar tissue remaining. Several cases are shown here with their diagnostic and prognostic documentations supplied by the leading tuberculosis institutions of the United States and made by leading experts in tuberculosis.

These cases should be studied and contrasted with those cases that are treated with the new Hydrazide drugs. As time passes, we will see whether resistant mutations in the tubercle bacillus to this hydrazide therapy will occur, as has been the case in the use of the antibiotics.

BILATERAL PULMONARY TUBERCULOSIS

With Large Retention Cavity* **

Treated in collaboration with
Dr. G. Warnshuis

The data on the first case, Mr. S. M., was taken in part from the records of the Herman Kiefer Hospital, Detroit, Michigan. He was sent to Herman Kiefer Hospital for X-rays and sputum test in September 1938, but received no treatment there. Hospitalization was recommended at that time. Dr. Derby's letter describes his condition at the time of this examination.

March 10, 1939

Chrysler Industrial Association
7900 Jos Campau Avenue
Detroit, Michigan

Re: Stanley M . . . G 110062
17207 Conley
Attention — G. A. B . . .

Gentlemen:

The above named was examined at this clinic on September 16, 1938, when a diagnosis of active pulmonary tubercu-

losis was made. Hospitalization was recommended. Our X-ray showed as follows:

Diaphragm: Costophrenic angle on the left is obliterated.

Right lung: Small amount of fibrosis visible in the infra-clavicular region. Left lung: Considerable mottling throughout the lower two-thirds of the lung with a large excavation near the root, measuring about 7 cm. in diameter and showing a definite fluid level.

Sputum examinations made in September and October 1938, were all positive for tubercle bacilli.

It was understood at that time that the patient was cared for by Dr. Koch's Clinic. He has not been examined at this clinic since then.

Very truly yours,
Arthur P. Derby, M. D.
Director of Out Patient
Department

Z.

Mr. S. M. came to our Clinic on October 20, 1938 for treatment by Dr. G. Warnshuis. His case history revealed that his father had died of intestinal obstruction. His previous illnesses were pleurisy in the left chest which was followed by pneumonia in 1935. In September, 1938, he began feeling badly, had cough raised sputum and had night sweats. We had his sputum examined by the Public Health laboratory. It was reported positive for tuberculosis. Our own sputum examination was confirmatory. His weight was 153½ pounds, normal weight being 182 pounds.

Radiograph I was taken at the Herman Kiefer Hospital on September 16, 1938. Radiograph II was taken at the time he came to our Clinic. A definite increase in the extension of the large cavity and tuberculosis infiltration is seen in this short time. His condition also retrograded constitutionally and with regard to the cough, night sweats, fever, etc.

He received 2 cc. of a 12X dilution of the serially arranged carbonyl groups. At that time he spent several weeks at our

rest home, but was not put on the strict bed rest so rigidly enforced for patients in his condition. He was then sent home and kept on a vegetarian diet. He was allowed to be up and about, but told not to exert himself so that he got tired or became fatigued. He kept a record of his temperature and other symptoms. He did his own cooking, shopping and drove his car from his country home, about 40 miles away, to our clinic every two weeks for a checkup. His improvement was slow at first, but steady. In a year he could do a little work. Radiograph III was taken on July 8, 1939. It shows healing of the large cavity during the recovery process.

On July 19, 1939, Mr. S. M. was examined by Dr. Douglas. He states in his letter of July 21, 1939 that "there has been some clinical improvement since last September," but that it was his opinion, "that this man is totally and permanently disabled because of pulmonary tuberculosis." Thus we see that in spite of Mr. S. M.'s condition when he came to us, he did make some definite improvement during this nine month period. Dr. Douglas still considered Mr. S. M. "totally and permanently disabled," and by this he meant, " . . . that the chances of recovery to the degree that this patient might be able to work are so poor that it is proper to say that he is totally and permanently disabled."

July 21, 1939

Dr. Peter Ivkovich
14128 East Jefferson
Detroit, Michigan

Dear Dr. Ivkovich:

In re: Stanley M . . . :

Stanley M . . . was examined here on July 19th and I have procured the films from Dr. West for comparison.

This man has a far advanced pulmonary tuberculosis and while there has been some clinical improvement since last September, still there is evidence of quite extensive disease of both lungs and sputum tests run last month in the laboratory here

showed the sputum to be strongly positive for tubercle bacilli. With a disease of this extent existing for this length of time it would be my opinion that this man is totally and permanently disabled because of pulmonary tuberculosis.

Very truly yours,

Bruce H. Douglas, M. D.
Tuberculosis Controller.

BHD
M

Mr. S. M. continued under our care. In February, 1940, we had an X-ray taken at St. Francis Hospital. At that time there was no evidence of a tuberculous process in either lung. The report of the Roentgenologist is reproduced here.

SAINT FRANCIS HOSPITAL
HAMTRAMCK, MICHIGAN
X-RAY ROOM PERMANENT RECORD

Patient's Name: Stanley M.... Age: 45 Date 2-2-40
X-ray ordered by: Dr. Wm. Koch X-ray No.: 17339
Region: Chest Address: 269 River Road

A flat roentgenogram was made of the chest.

Diaphragm: The leaves are smoothly rounded and normal in position. The costophrenic and cardio-phrenic angles are clear.

Heart: Is normal in size, shape and position.

Right lung: There is some increase in the lung markings toward the base. The lung field is otherwise clear.

Left lung: Here also there is some mottling at the base. The upper portion of the lung field is clear.

Conclusions: The findings are those of a low grade respiratory infection. There is no evidence of a tuberculous process in either lung at this time.

The patient should be re-examined in from two to four weeks.

S. FORD, M. D.

Roentgenologist

The testimony of Dr. Omer Hague from the Federal Court trial in 1946 has been paraphrased and reproduced here. It should be studied with the recovery data on this patient.

DR. OMER GRENVILLE HAGUE

"The radiograph of September 16, 1938, is that of a male chest with the bony cage and ribs and collarbones and heart cavity in the middle and diaphragm down here. There are some infiltration shadows in parenchyma, or the active portion of the lung in these areas, in the fourth, fifth, and sixth and seventh interspaces anteriorly and a large cavitation shadow in the mid-lung zone. I am measuring the left lung. That cavity measures $2\frac{1}{2}$ inches by $3\frac{1}{4}$ inches, a little better than $3\frac{1}{4}$ inches. The outside measurement of the capsule of the cavity. By a little better than $3\frac{1}{4}$ inches I mean about $\frac{1}{8}$ of an inch more. The reason I am not saying that with certitude is that the upper border of that cavity is very, very thin and very, very faint, but we can see that line that it follows and I would say it would be $3\frac{1}{4}$ inches at least. That is being very conservative. There is a small fluid level at the bottom of that cavity. There are, also, some heavy hilar shadows, and some thickening of the peribronchical trunks; that is, the lymphatics that follow the bronchi and smaller bronchioles. Those shadows indicate repeated infections that have resulted in inflammation and the inflammation has gone on to scarring.

The film dated July 8th, 1939, appears to be a film of the same chest; the ribs strip with the previous film. The lung tissues on both sides show soft infiltrated shadows throughout the lower two-thirds of both lungs. There is an interlobar line, indicating a thickening of the pleura between the middle and lower lobes, on the right side. There is a shadow in this area. It is smaller than the cavity on the left side previously referred to. It is in the same interspace level, so that I conclude it is re-

lated to the previous cavity. It measures $1\frac{1}{2}$ inches by 1 inch. The wall of this cavity is less distinct. That is why it is a little harder to see. The shadows in the lung are of a soft consistency which would suggest an activity of disease in the lung structure itself.

In the film dated September 16th, 1938, the linear markings are fairly well fibrosed, hard. In the film dated July 8th, 1939, we see them softened and in an active state of inflammatory change. In the film dated June 18th, 1940, this inflammatory reaction has disappeared and the outline of the cavity is very, very faint, practically disappeared. It would be very hard to measure it accurately. It would be about 1 inch by an inch and a quarter. The general appearance of this chest is much better than in the films taken September 16th, 1938 and July 8th, 1939.

Cavities almost of any size are a poor prognosis type of tuberculosis cases. The tendency usually is for individuals that have cavitation, that they get more cavitations rather than less. Cavities usually tend to get large and unless they are treated successfully by a pneumothorax, or some other compression therapy, and are held down for a long time, they usually get worse and the patient's outlook is serious.

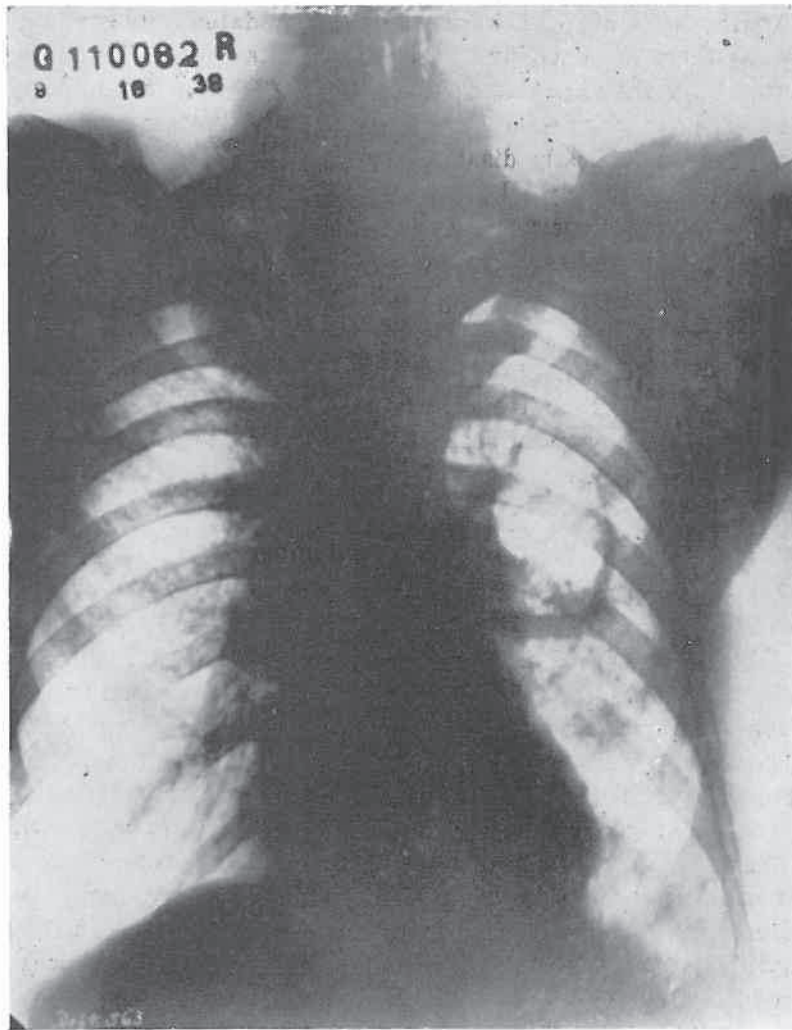
The cavity in the film dated September 16th, 1938, I think is about as large a one as I have ever seen and I would say that that patient's condition would not be a good risk at all.

The two succeeding pictures dated July 8th, 1939, and July 18th, 1940, show that there has been an extensive constitutional change taking place; that is, the soft tissue of the lung has undergone a remarkable exudative change; that is, there is a softening of the structure all through and in an instance like this that patient would have more cough and more sputum and it might be in the healing phase following this type of chest. For instance, the tubercle from this cavity may have been coughed up and spread out throughout the whole lung and that might be a cause for the infection from here to become broad-spread in that chest almost like a tuberculous pneumonic condition and then in this view, this pneumonic process has disappeared and the shadows in the lung are back to what you would

expect of an individual of this age and following conditions of a tuberculous recovery.

The prognosis on the first film dated September 16th, 1938 would indicate a very serious situation.

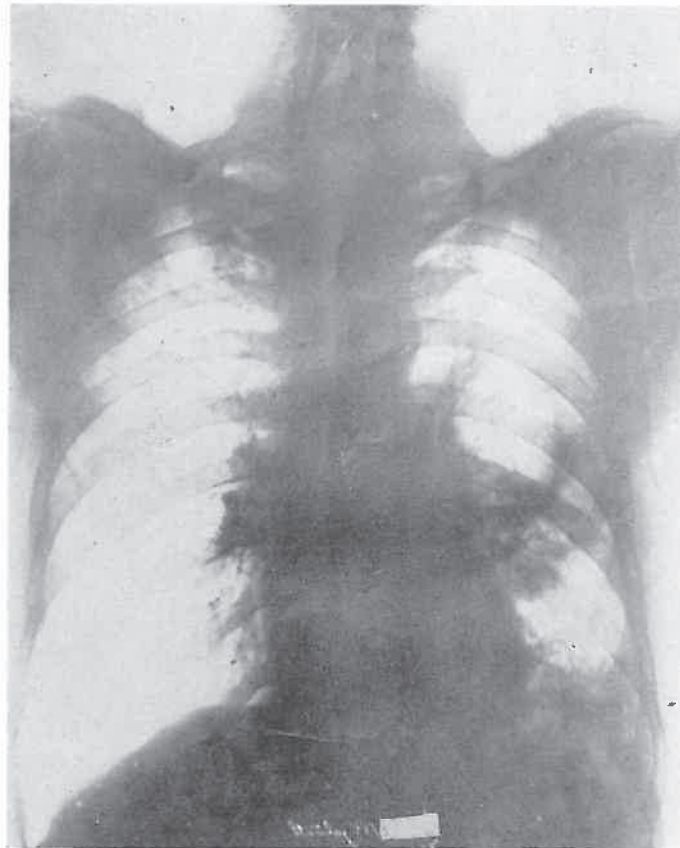
The prognosis on the third film dated June 18th, 1940, with-



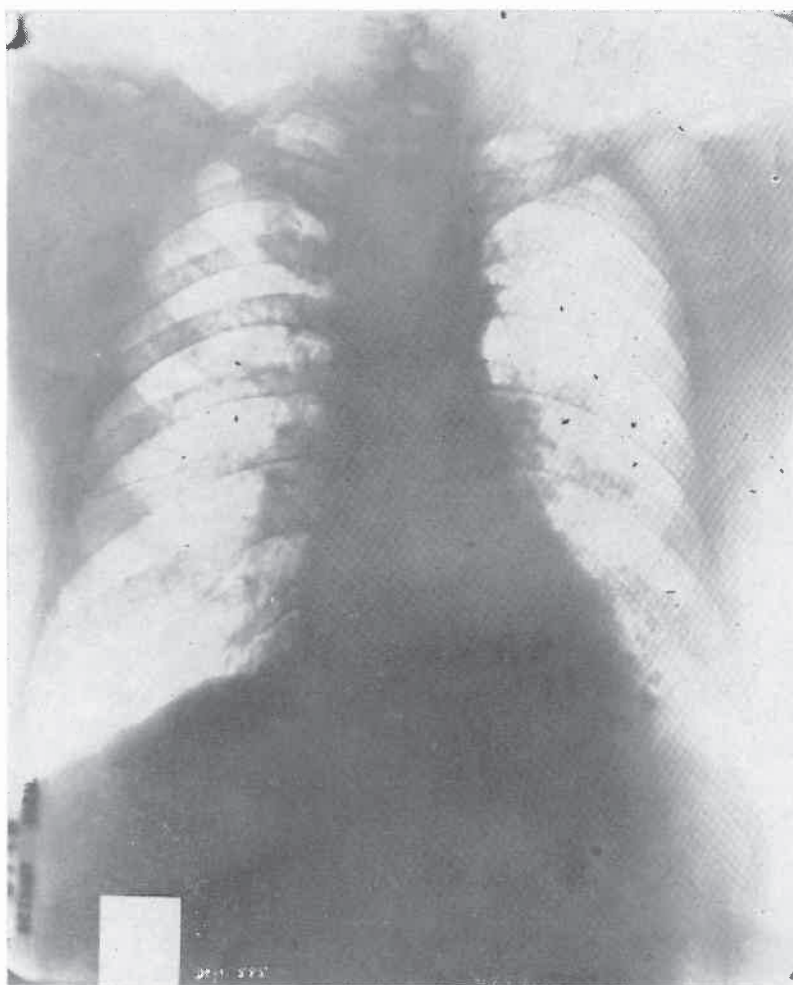
Radiograph I, taken at Herman Kiefer Hospital,
September 16, 1938.

out knowing anything about the other two, would be very good."

In the Spring of 1942, Mr. S. M. went to work for Fisher Body, a division of General Motors Corporation. He did hard manual labor, worked long hours and overtime as well. During his employment he was given examinations and X-rays were taken. They established his good health and he was permitted to continue work. His sputum has been negative since his recovery. He has continued working and testified in the Federal Court trial in 1946.



Radiograph II, taken at our clinic on October 20, 1938 and showing extension of the tubercular process.



Radiograph III, taken on July 8, 1939, about nine months after treatment and showing healing of the cavity and the lung tissue undergoing reconstruction.

EXTENSIVE MILIARY TUBERCULOSIS
With Tubercular Meningitis and
Tubercular Nephritis and Splenitis**

The rapid advance of the disease in Miss N. A., age 14, when treated by the writer in July 1922, was reversed from the terminal stage by one injection. She had been in the Detroit Tuberculosis Sanitarium from the end of January until April. The radiographic findings of January 30, 1922 were:

"Both diaphragm leaves are clear. The trachea shows no compression or deviation. The heart shadow is normally placed. Increased deposit at the hilum on both sides. Some accentuation of the linear markings throughout the right lung field. No definite evidence of a parenchymal lesion in the right lung field. There is extensive parenchymal infiltration throughout the left lung field, with greatest changes in the upper half. Several small annular shadows at the apex and at the level of the first and second ribs anteriorly. We believe these represent small cavity formations. Diagnosis: Advanced parenchymal tuberculosis confined to the left lung field."

It will be noted that the lesions are located subclavicularly as in the most rapidly disseminating type. Six months later I examined her. She was emaciated, bedfast, comatose, with frequent projectile vomiting for three weeks, cyanotic, with rapid shallow respirations, very rapid, thready, practically uncountable pulse, with the head drawn back in continuous opisthotonus. The fever was 105.5° F. The heart was drawn over into the right side of the chest; the left chest was empty of viscera so far as could be determined, but contained fluid that splashed on shaking her. This lung had spontaneously ruptured.

The right lung showed huge cavitations and consolidations, and the splenic area presented a hard, fixed tumefaction as large as her head. It could not be determined then if this was kidney, spleen or both involved in the tuberculous process. She was near death with a tubercular meningitis besides. Two cc. of the carbonyl groups set up in long open chain series was given in the 6X dilution. The recovery process was slow at first, but this was to be expected considering the condition she was in at

the time I examined her. It was some months before she got out of bed. A year later the heart was still on the right side of the chest, but the left chest was not empty any more, it was full of apparently a fluid and fibrotic tissue. At the time she was walking about, her heart rate was still exceedingly rapid and weak, though it had dropped from around 150 to around 130 per minute. Her temperature was normal. After that she gradually got better and the heart went gradually over into the left chest where it belonged. The heart rate slowed down.

An x-ray taken July 24, 1944 shows that the left chest, which was so badly involved, is not exactly normal yet in all these twenty-two years because there is less lung tissue there. That is because part of the chest is replaced by the structures of the mediastinum. The lung tissue shows markings in chests that one would interpret as healed tuberculosis. These marks are very, very small, about a millimeter or two in diameter, dense, fibrous, showing calcification. It shows that the healing process has been very complete, and the scar tissue present from the large lesions healed and are very, very minute.

In this case we have a recovery with reconstruction in both lungs. The other pathological conditions cleared up during the recovery process. Her weight has increased to 145 pounds. She is married and has given birth to twins, pretty husky children. She has remained well to date (January, 1957).

FAR ADVANCED TUBERCULAR PNEUMONIA

Or Acute Miliary Invasion, in Extremus At Time Of Treatment*

Another case of pulmonary tuberculosis in extremus at the time of treatment with carbonyl catalyst is that of Mrs. M. B. H. and is of the type that has always advanced to fatality, namely originating in subclavicular lesions in both lungs. At the time of our treatment April 2, 1934 her condition was too critical to permit a thorough differentiation as to whether she was dying of an acute tubercular pneumonia, or of an acute widespread miliary tuberculosis. She was "sunk in bed," fever hovering about 104° F., rapid thready pulse, cyanosis, with flush from

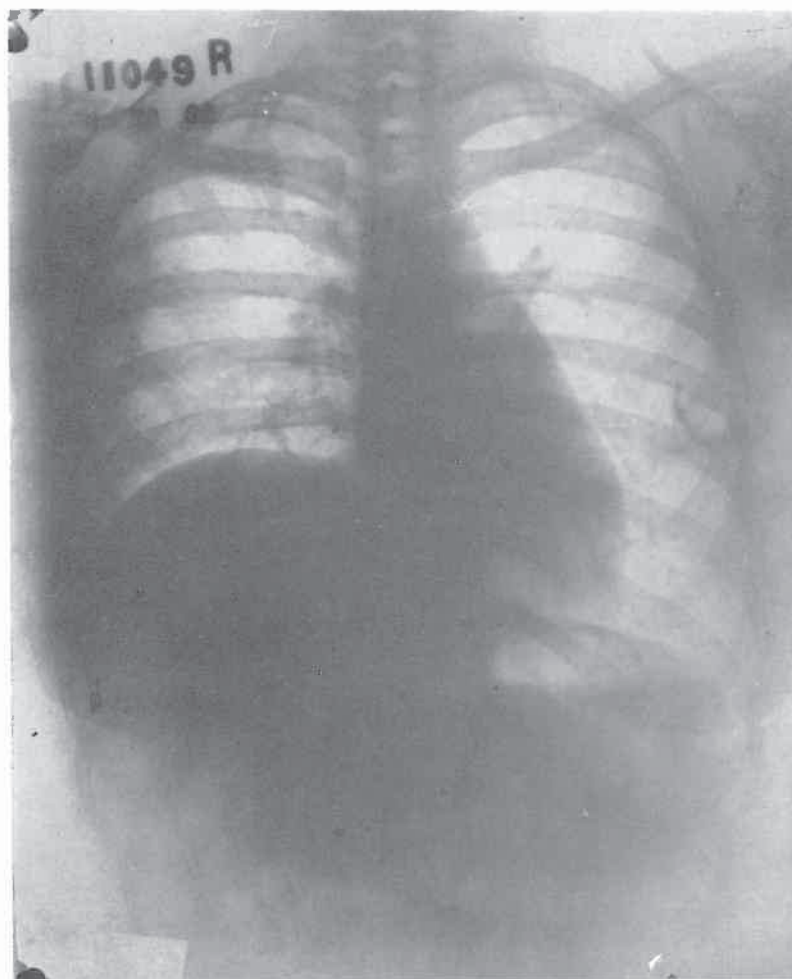
the fever, yet the skin showed yellow hemolytic color after compressing the flushed capillaries. The breathing was very shallow and rapid, and very little but bloody sputum was raised. The physical findings scarcely revealed the cavity, only rales and solidification. No radiograph was taken at the time. A 2cc injection of carbonyl catalyst was given immediately. She had progressed to this stage from an early subclavicular and apical involvement thought to be a "cold" in August 1931, when she entered the Herman Kiefer Hospital of Detroit. The condition advanced to that shown in their film of April 23, 1932, Radiograph I. She remained in the two Detroit Public tuberculosis hospitals up to late in March 1934 when she was brought to our clinic. Films of January 18, 1934 and March 8, 1934, show the advance of the disease under their care with the development of the large shaggy cavity with slight fluid level behind the right clavicle. The latter film being reproduced here, Radiograph II. The hospital doctors wanted to perform a Thoracoplasty operation upon her at that time. She left because she did not want this operation. She felt too sick for such a drastic operation, with her high fever and exhaustion. Her sister brought her to our clinic on March 31, 1934. The sputum was loaded with tubercle bacilli. The films show the advance of the disease in both lungs and the infiltrative development of the cavity wall. We took no radiographs until six months later when she was up and about and doing light work. Radiograph III, September 24, 1934, shows a smooth wall cavity. At this time there were no tubercle bacilli found in the sputum at daily tests for two weeks. This cavity represents the area where the infection had taken place, and where lung tissue was again healing in after the disease tissue was removed, and the completed process is shown in Radiograph IV, September 12, 1942, when she appeared to testify at the Federal Court in the writer's defense.

She left the city after leaving our clinic and within a year went to work, at which she has remained ever since besides being married and living a normal life. Frequent sputum tests showed no more germs of tuberculosis and her gain in weight and perfect health mark her cure as complete. Physical findings

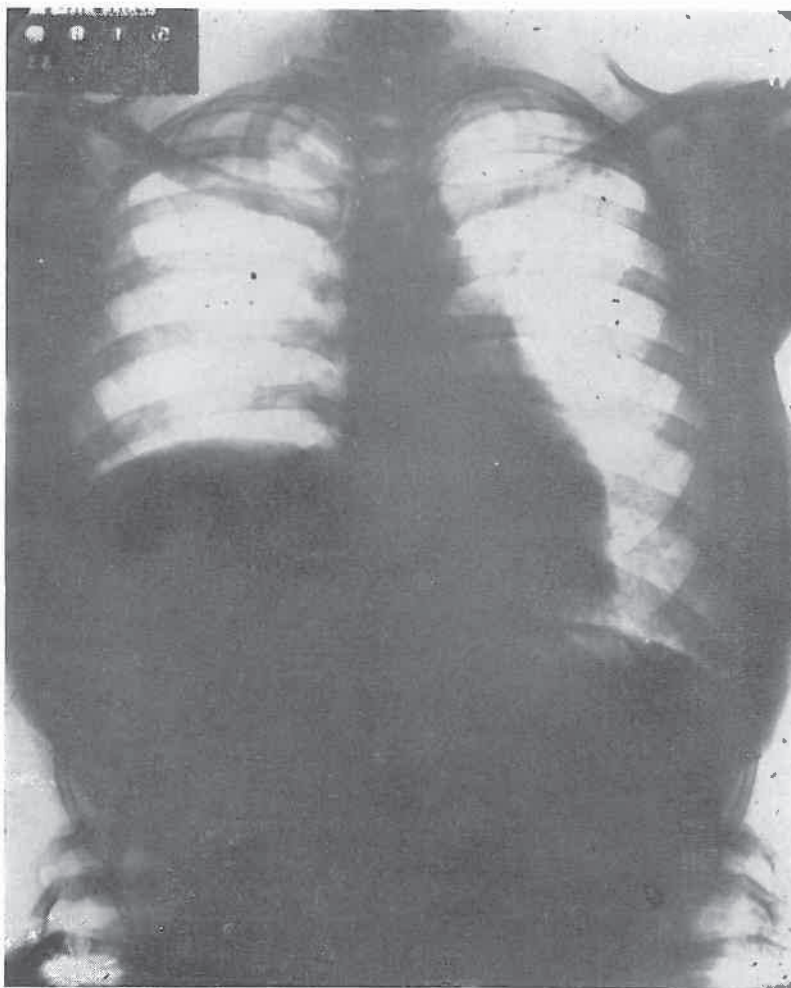
are normal. Her X-ray report at the time of entering the Herman Kiefer Hospital is reproduced in photostat, from the court documentations.

HERMAN KIEFER HOSPITAL			
X-RAY REPORT			
NAME	Mary		CASE NO.
DATE	Aug. 31, 1931	PAVILION	2 - A
PART X-RAYED	Chest - Single film	BOX NO.	
REPORT OF X-RAY			
Thorax, diaphragm and heart reveal no pathology. Right lung: There are scattered infiltrations of the mixed type, throughout the upper third of the lung. There are areas of rarefaction near the clavicle, the largest measures about 3 cm. in diameter and shows a small fluid level. The remainder of the lung is clear. Left lung: There are exudative infiltrations visible at the 1st interspace. We see no cavities. There are less dense infiltrations in the apical region and at the 2nd interspace. Conclusion: Far advanced tuberculous process of the mixed type, involving the upper third of both lungs. There is a large cavity on the right as described. Dr. Birkele - T			
INTERPRETATION			
SIGNED			

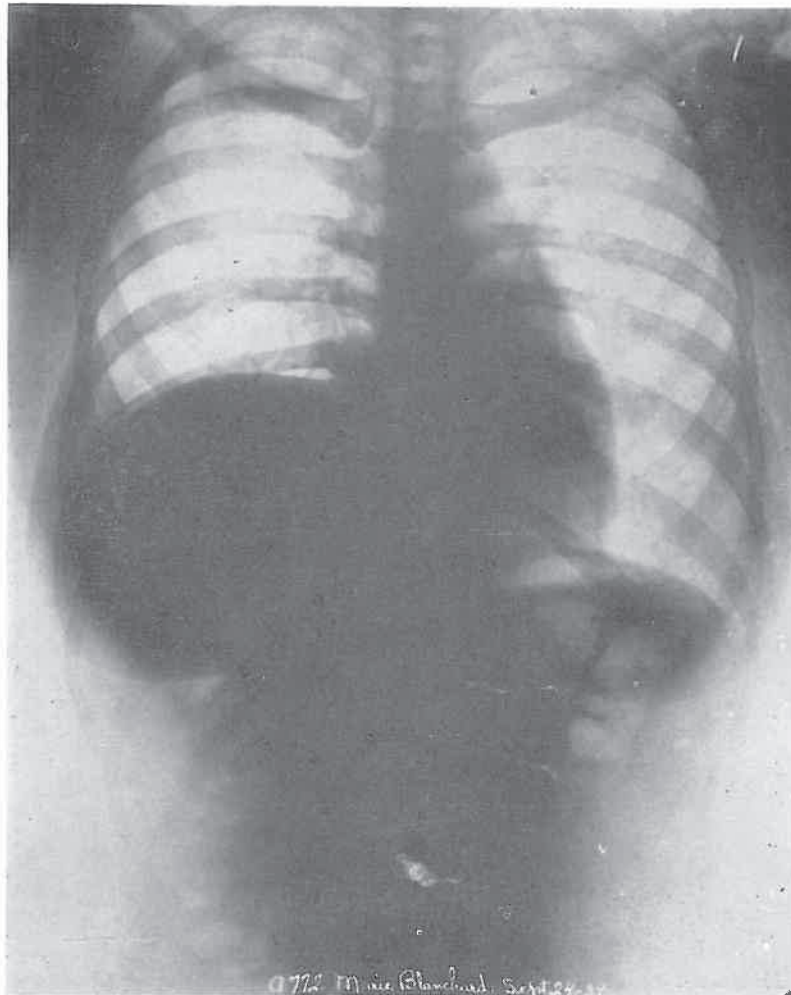
This report shows the condition of Mary B. when she entered the hospital.



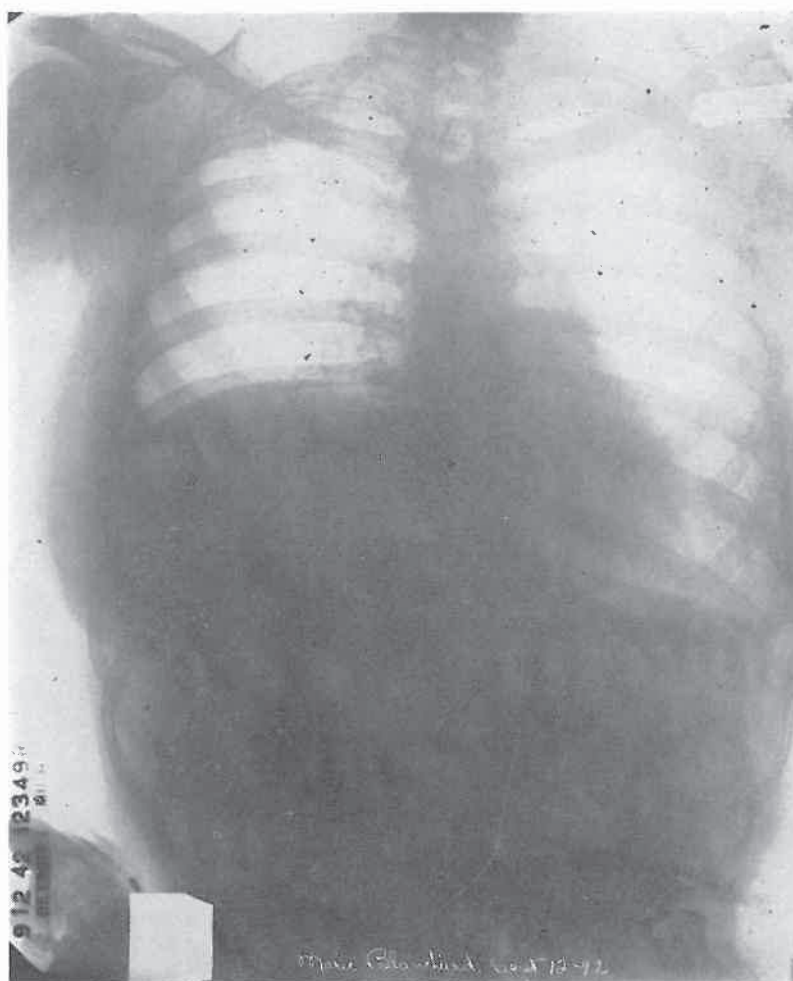
Radiograph I, made in April, 1932 shows advance of disease from August 1931 in the hospital.



Radiograph No. II, shows advance of disease in hospital up to March 8, 1934, with cavitations.



Radiograph No. III, shows the cleaning out of the tubercular infection and a sterile cavity undergoing healing. This radiograph was taken on September 24, 1934 about 5½ months after treatment.



Radiograph No. IV, showing the cured state in 1942,
eight years after treatment.

ADVANCED TUBERCULOSIS

With Cavitations In Both Lungs*

This is a case of bilateral cavitation with subclavicular lesions and two large thin walled apical cavitations on the right side. She steadily deteriorated under the best Sanitarium care in Cleveland, Ohio, (Sunny Acres) and in Detroit, Michigan, from 1931, when her thyroid gland was removed at the Crile Clinic of Cleveland, until September 2nd, 1934, when she received treatment in our clinic at Detroit.

HERMAN KIEFER HOSPITAL				
X-RAY REPORT				
NAME	Cora	CASE NO.	11884	
DATE	Mar. 10, 1932	PAVILION	E - 1	BOX NO.
PART X RAYED	Chest - Single film			
REPORT OF X RAY				
Thoras, diaphragm and heart reveal no pathology. Right lung: There are dense infiltrations of the mixed type, in the upper third of the lung. There are small areas of rarefaction in the infraplavicular regions, the largest measures about 2 cm. in diameter. Left lung: There are rather dense infiltrations in the upper half of the lung. There are several areas of rarefaction near the clavicle, the largest measures about 2 1/2 cm. in diameter. Conclusion: Far advanced tuberculous process mixed in type, involving the upper upper half of the left lung and the upper third of the right. There are cavities on both sides as described. Dr. Birks - T				
INTERPRETATION				
SIGNED				

Miss C. P. was examined at Herman Kiefer Hospital, Detroit, Michigan, in March 1932. A photostat of the hospital X-

ray report is reproduced here. This is done because the radiograph does not show all of the lesions well.

Radiograph I shows the extent of the disease on February 24, 1934, about six months before she came to us for treatment. Phrenectomy and pneumothorax had been unsuccessful in curing this patient. At the time we first saw her, the prognosis was serious. Bloody sputum loaded with tubercle bacilli was expelled up to the time of our examinations in September, 1934. We found the upper half of both lungs invaded and a highly toxic state that resulted in unusual muscular weakness. On September 2, 1934, she was given 2 cc. of the serially arranged carbonyl groups. This toxic state quickly left so that two weeks later she went to work instead of being confined to bed rest. She received a second treatment on November 24, 1935. Since then she has had three more treatments over the years, one in 1937, 1939, and 1942. She has been working, is married and in good health, according to our last report. Radiograph II, taken March 22, 1943, shows the cured state, with minimum of scar tissue and return of normal lung parenchyma.

This case shows how the basic toxic state that caused hyperthyroidism requiring thyroidectomy, also removed her resistance against tuberculosis infection, and caused other disturbances resulting in muscular weakness. This latter effect persisted until the time of receiving the carbonyl therapy, and then very quickly disappeared. **It was no doubt due to suprarenal cortex inhibition.** Her testimony on this point taken from the court records includes this,—“When I first visited Dr. Koch, I was very short of breath and was able to walk a short distance only,” and “I felt better almost immediately after the treatment, and went back to work fourteen days later, September 16th.”

The testimony of Dr. Hague on this patient's x-rays has been paraphrased and reproduced here.

After examination of the X-rays from Sunny Acres Sanatorium, Dr. Hague stated in regard to the X-ray taken 8/6/32 that: “This is a radiograph of a thorax of a female patient,

showing the breast cavities with a tuberculous process in the upper half of both lungs, of an advanced degree, with cavitations in the left apex, about three of them contiguous with one another, so I shall measure them all together. They measure two inches by one inch."

"There are also some shadows in the opposite side that suggest smaller cavitations behind the second rib anteriorly on the right side. This area of whiteness is an extensive tuberculosis process in the upper lobe of the right lung. A similar condition exists on the left side, but it doesn't show so much density as on the right, because there is a cavitation process which has taken away some of the fibrosis, and that has been spat out as sputum."

"The descending bronchi are thickened because of repeated drainage from the upper areas of infection that have passed down into the lower trunks on both sides—lower bronchial trunks on both sides."

X-ray film dated 11/5/32: "This film shows the same patient with an aggravation of the disease, in which there is a shadow in the first interspace anteriorly, suggesting cavitation; and an enlargement of the shadows on the left side, indicating enlargement of the previous cavities. And, I believe an angular shadow that is on the left side in the previous film now shows more clearly that it is becoming a cavity, too. So that you now have an area of potential multiple cavitations measuring three inches by two inches. I would say that this patient is worse on this (11/5/32) film than on that one (8/6/32)."

X-ray film dated 2/11/33: "The tuberculosis process in the right lung has increased. The cavitation is large; measures an inch and a quarter outside measurements in both diameters. The total area of cavitation in the left upper lung is slightly more, but there is a concurrent factor of a pneumothorax in which there is air in the base and up over the upper lobe of that lung."

X-ray film dated 5/17/33: "The only significant change in these two sets of film is that there is a little better compression over the apex of this lung, and one fairly strong adhesion band at a level of the third rib anteriorly is holding lung structure from complete collapse in that area."

X-ray film dated 8/16/33: "The same conditions exist in this film, with the exception that the outline of cavity in the right upper lobe, measuring two by one inches, is more clearly seen. There are still adhesions on the left side."

X-ray film dated 11/29/33: "I would say the left lung doesn't show any significant change from the left lung in the immediately preceeding, but the changes in the right upper lobe indicate the cavitation a little more sharply outlined, and a little heavier in cavitation wall thickening, which would suggest to me that there is more activity (the tuberculous process would be more active, creating more inflammation), and the response to the inflammation is characterized by a deposit of fibrous tissue surrounding that cavity."

X-ray film dated 2/24/34: "This is a little lighter film. The right apical cavity is clearly seen. The fibrous tissue surrounding it is a little less in density, but it is still present."

X-ray film dated 5/26/34 was then shown to Dr. Hague and he stated his opinion as to the general picture of the pathological condition of this patient at the time of this picture. "The three last views show no appreciable improvement under pneumothorax therapy. The diseased area of the left lung, with its cavitations, has not completely collapsed, because there are adhesions remaining, and the cavitation in the right apex with the associated fibrosis still exists, and I would say that that is a very serious case of active tuberculosis."

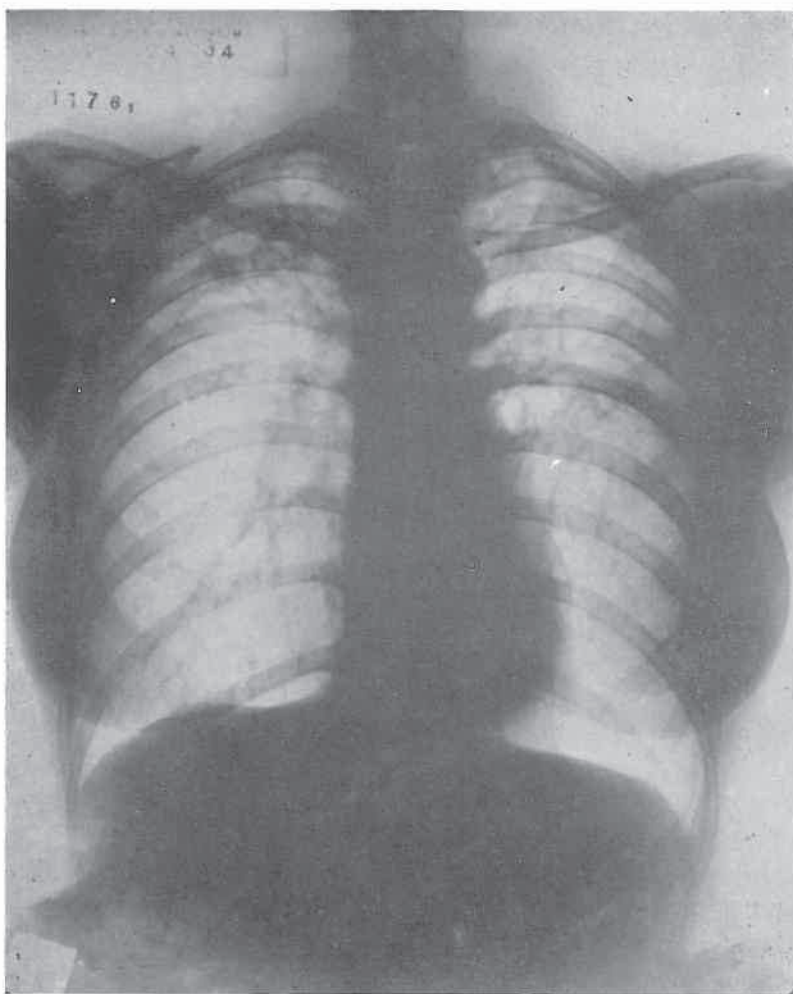
Where the patient is still showing positive sputum, the prognosis is serious. [It should be noted that this last X-ray (5/26/34) was taken over 3 months before the patient was treated by the author.]

Dr. Hague was shown an x-ray taken about seven and one half years after the patient was first treated in Dr. Koch Clinic. He stated that the x-ray taken February 19, 1942 "indicates a very marked improvement of this patient. The pneumothorax previously seen has now disappeared, the gas has been absorbed, and the lung has re-expanded to fill the chest cavity. The areas of former large cavities in this side, in the left upper first and second interspaces, have practically gone, and the annular shadow on the right side in the first interspace also is gone, but there still remains a mild fibrosis in the first and second interspace at the site of the previous infection. There are fairly heavy hilar shadows in the left upper mediastinal area which have come from the inflammatory reaction of the large area of cavitation previously seen."

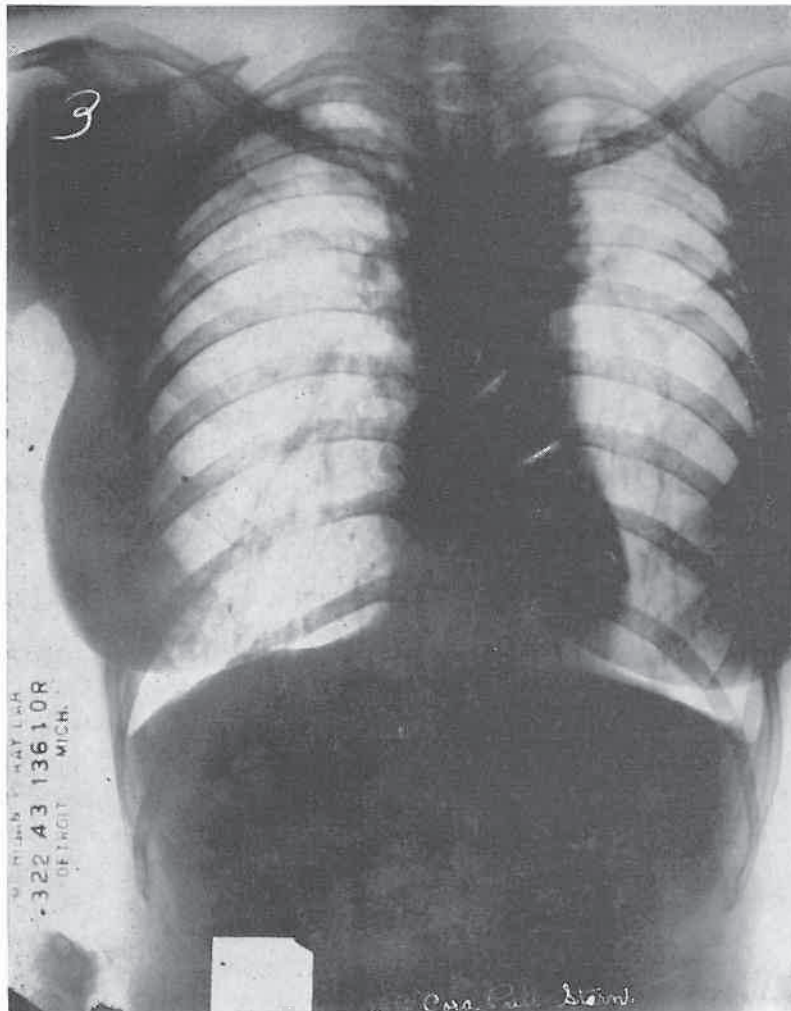
The last film, that had been taken on March 22, 1943, is reproduced here and is radiograph II. Dr. Hague stated: "That it does not show very much change from the one immediately preceding (2/19/42). I would say it is about stationary."

To the question: "Assuming at the time of the last two films that the general health of the patient was good, and there was no sputum or no blood, what would you say as regards improvement or recovery process in these films?" Dr. Hague answered: "Well, having seen all the cavitations of the left side and the large one on the right—these two show a remarkable removal of disease process. It would be considered an excellent recovery if it were in the ordinary course of observation in a sanitarium. We would consider that a cure, under sanitarium conditions."

The basis for disease in its various exhibitions in this case is demonstrated to be a failure in tissue carbonyl activity which was repaired by the catalytic dose of activated carbonyl groups, given in the form of long chains of carbonyl groups, with free radical terminals.



Radiograph No. I, taken February 24, 1934, about six months before treatment, showing cavitations in the right apex.



Photograph No. II, taken March 22, 1943, showing recovery. It was taken for court purposes.

TUBERCULOSIS OF LUMBAR SPINE**

J. A., age four, came to us with a diagnosis of tuberculosis of the spine in August 1924. He had been diagnosed by Detroit's leading Orthopedist, Dr. La F . . . , Sr., who advised an Ablee Splint operation. He was supported by a brace that limited motion and reduced the pain only partially.

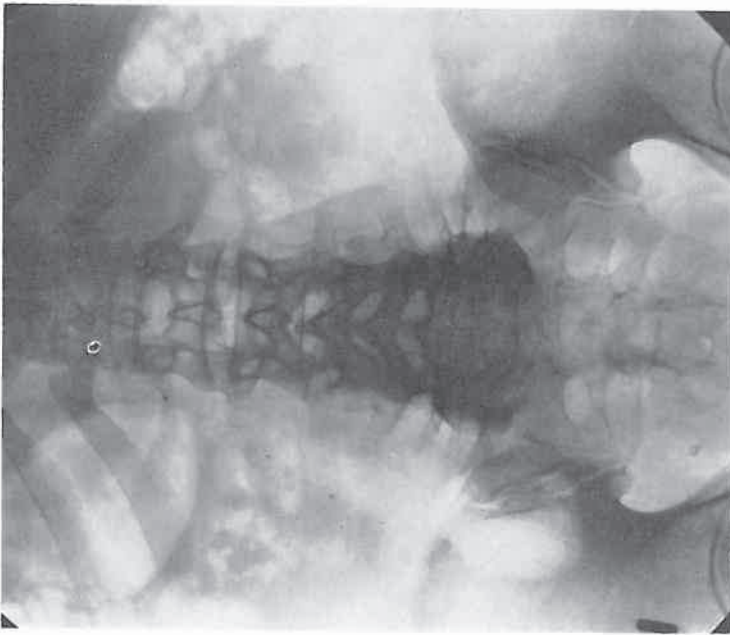
The Family History showed his older sister had far advanced pulmonary tuberculosis.

For about a year he had increasing pain in the lower back and legs, found it difficult to get up after falling and would cry out with pain when he relaxed in bed on going to sleep. We fitted him with a brace too. It did not limit his motion too much, but it did aid him during his sleep.

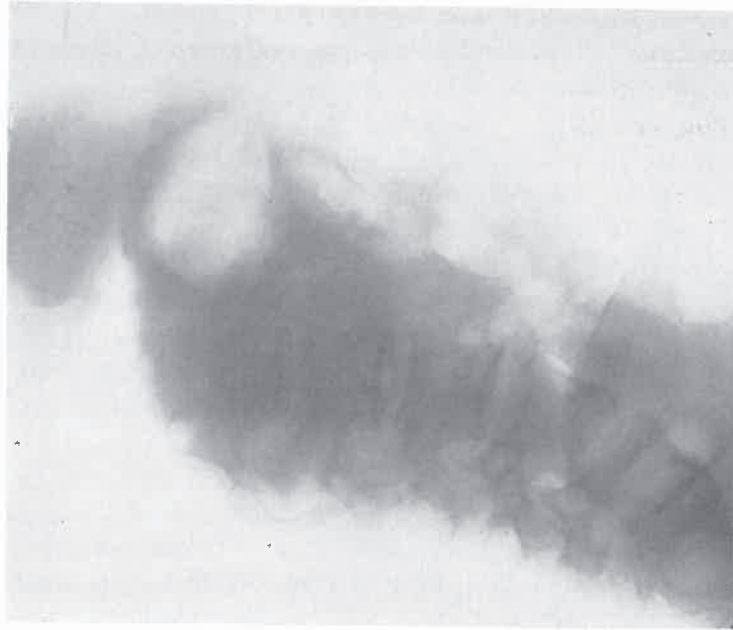
Examination showed a typical tuberculosis kyphosis in the lower lumbar spine. The two lower vertebrae showed a sharp angulation that protruded with collapse of the bodies of the vertebrae. There was considerable swelling of the soft tissues and muscle spasm about the region which limited motion.

We gave him one cubic centimeter, 12x dilution, of the serial system of carbonyl groups. There was a steady improvement so that he could discard the brace entirely in November 1925. The kyphosis gradually disappeared and the pain and limitation of motion, disappeared with it. Within a year the spine was straight.

The radiographs made by the orthopedist at the time showed the collapse of the bodies of the fourth and fifth lumbar and the angulated deformity. The radiographs taken after he was cured more than eighteen years showed the two vertebrae fused in perfect alignment so as to form one vertebra. In the upper thoracic spine an area of rarefaction the size of a large pea was to be seen. This showed in the healed spine as an area of dense bone where the disease was cured before it could do any damage. The radiographs showing the healed state were submitted as exhibits to the Federal Trade Commission, but we did not receive them when the exhibits were returned and thus we are unable to reproduce them here. In April 1957, two radiographs were taken of the lower spine; one



Radiograph I, was taken in April, 1957, of Mr. J. A. and shows the anterior-posterior view of the lower spine.



Radiograph II, was taken in April, 1957, of Mr. J. A. and shows the lateral view of the lower spine.

an anterior-posterior view and the other a lateral view. The perfect alignment in all directions is seen. The spine is found now to be one vertebra short.

In High School he participated in sports and received a letter in track. He attended the University of Michigan. Since his graduation, he has continued to live an active life and earn his own living. In April 1957 he reported that he is in excellent health and that his back never bothers him.

Normally, tuberculosis of the thoracic vertebrae usually results in severe deformity under conventional methods of treatment, i.e., by holding the patient in a rigid shell for many years. Where there is present a metastatic lesion the chances of survival are only slight.

Extensive discussion is due this disease since it supports our working hypothesis so nicely. After the dilute dose of the reagent, the most virulent tubercle bacilli, even as found in exceedingly destructive skin tuberculosis in Brazil seem to lose their pathogenicity, and the most resistant and progressive lesions have healed with complete cure, just as we have seen in leprosy. The disappearance of the fibrosis with its captured germs and the replacement with angioblastic tissue and then with normal lung parenchyma, the increase in strength and general health of the patient, even while tubercle bacilli are thrown out in large numbers has been our observation for nearly 40 years. It suggests the curing of the germ as well as the patient, and implies that the germ was pathogenic only because it was sick itself—defective in its own oxidation catalysis.

CHAPTER IX

PUS INFECTIONS

The etiological position of chronic infection in the causation of cancer requires that any treatment that will cure cancer must very efficiently cure infection. We will show by a few of the many cases cured how fulminating staphylococcus septicemia of the most virulent kind, that failed to yield to the other methods at hand, did reverse and become cured after a dose of one of the reagents reported here. Since these cases are decisive more need not be given.

ACUTE FULMINATING STAPHYLOCOCCUS AUREUS PYEMIA

With Double Pneumonia and Pylonephritis Complicating Osteomyelitis In A Boy

Treated in collaboration with
Dr. L. Andrews

N. R., age 5 yrs., took sick with 105° fever and pain in the left tibia. This was opened at the Victoria Hospital and yielded 300 cc. of pus which proved to be a pure culture of the staphylococcus Aureus. In a few days the symptoms pointed to infection of both kidneys and the urine showed the same organism in large amounts. Lobar pneumonia in both lungs appeared immediately and the blood culture showed a pure rich infection of the same organism. He rapidly and steadily declined and soon it was difficult to get him to take food and water. The fever remaining high led to progressive weakness and a sort of mummification in spite of all of the best hospital care. His brother was immunized with a vaccine made from a pure culture of the staphylococcus aureus. Then the brother's blood serum was given to the patient. He had nine blood transfusions while in the hospital between July 13 and Aug. 2, 1940. Neither this nor other measures as sulphathiazole made any impression on the advance of the disease. The patient was given up as hope-