

# William F. Koch, Ph. D., M. D.

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## CANCER ITS FUNCTION AND CURE, THE EVOLUTION OF THE IMMUNITY PROCESS 1925

### A Four Part Essay

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Dr. Koch, as a result of 10 years of laboratory experiments at the University of Michigan and at the Detroit College of Medicine and of 7 years of clinical observation concludes that cancer is a systemic disease of parasitic origin, that the cancer tumor is an inadequate effort on the part of nature against the toxins of the invading organism and that cancer can be cured by chemotherapy.

### Editor

CANCER ITS FUNCTION AND CURE WM. F. KOCH, PH. D., M. D.

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The following paper for which 2000 words are allowed is given in outline to cover the large amount of material concerned, and to answer several of the questions repeatedly asked regarding our treatment.

Philosophy does not retain the notion that nature is self-destructive, for if it were self-destructive, it has had in the ages that have passed plenty of chance to cease to exist. Therefore, we cannot hold the view that cancer has accidentally or purposely come into existence to destroy the body that produces it, nor that it is the great blunder of nature, as the pathologist would claim.

Neither has cancer any ordinary physiological function, for the normal body gets along

physiologically without it. There can, therefore, be only one contingency to determine the occurrence of the cancer manifestation, namely, that it must be a new response to environment, a mechanism of adaptation in the progress of evolution, an immunity or protective effort. If this be so, we can look to the perfection of the effort in the ages to come as a new acquirement, undoubtedly of a new gland of internal secretion providing better adaptation to environment. Cancer is not a blunder, but one of the wonders in nature.

Physiologic affairs are efficient to a high degree, thus the supply of any activity is regulated by the demand. The various cells of the organism not only serve their own needs but specialize in the service of the body as a whole, taking up and perfecting those activities that they are best adapted to. Thus we observe the activity of the parathyroid glands that protect the body as a whole against the guanidine bases that are distributed through the blood to every tissue of the body in sufficient amount to rapidly prove fatal. (1) Likewise there is proof that the cancer effort is directed to protect the body against a certain toxin distributed by the blood and that this protective function is attempted by tissues not too busily engaged in other physiological direction, as the resting mammary gland or the uterus, and especially by tissues where congestive changes bring a greater quantity of the toxin to the tissue.

Practically every cancer patient presents evidence of poisoning over a period of years previous to the incidence of the growth. (2) This poisoning ceases in part or entirely during the growth period. So definite is this fact that it is often possible to tell the patient when the growth was first noticed after getting the data on the intoxication symptoms. In a way, then, the cancer effort demonstrates its protecting function, insomuch as it may, by removing the intoxication symptoms.

But, with the incidence of the growth, a set of symptoms of cachexia arise, and these result from the presence of a substance formed by the cancer tissue acting upon the original toxin that called forth the cancer effort. Thus the cancer cells produce an even more harmful poison out of the toxin of which they try to dispose. And the fact that the cancer cells convert the growth producing toxin into something else throws light not only on their function but also points out what is the nature of the immunity process. If the cancer function was one of oxidation simply it could destroy the toxin and thus dispose of it. But such is not the case. It converts the toxin without oxidizing it into a substance of different isorropesis state.

Thus the cancer effort is not simply intended for purposes of destroying and eliminating the growth producing toxin but it is so directed as to preserve this material, to use it for further elaboration, and the only reasonable purpose of which is that of antitoxin production. We have demonstrated chemically that toxins are the material from which antitoxins are made. Antitoxins are not new substances built up from the tissues to neutralize the toxin as the Ehrlich theory states. Antitoxins are converted toxins of such isorropesis state that they are destructive to their source, the causal infection. The cancer effort falls short of its mark. It does not succeed in producing the antitoxin, so the effort is not adequate, and it persists and tries until it has sapped enough vitality from the patient to kill him. The attempted function of cancer, then, is to convert the toxin of the disease into its antitoxin and to thus establish immunity:

Our work is based upon the isolation and identification of the growth producing toxin, the successful synthesis of the antitoxin and the successful synthesis of the substance that can convert the toxin of the disease into its antitoxin right within the body. Thus accomplishing the work the cancer activity attempts to do.

## **ADMINISTRATION OF THE TREATMENT**

The substance we are using is a synthetic chemical, structurally a late intermediary phase of the antitoxin in its transition from the toxin state of structure. One c. c. of the substance is given subcutaneously, generally to the arm. Time is then allowed for cure to take place. If necessary, after an interval of several months, the dose is repeated.

## **REACTIONS**

The mode of action of the substance is in a way similar to several other chemical reactions, as for example, crystallization of a saturated solution under the influence of "seeding" by a crystal. In this case the crystal placed in the saturated solution induces through the electronic wave consequent to its state of isorropesis similar electronic waves in the molecules of the substance (in tune) in the solution, in response to which these molecules assume a similar structural state. So the "Converter" injected into the patient, by virtue of the electronic waves emitted, induces a change from the toxin state to that of the intermediary injected.

This phase of the intermediary is, however, not stable and passes on into the antitoxin state automatically. Thus all toxin follows suit and becomes antitoxin. A complete conversion of toxin into antitoxin takes place and the results can be demonstrated in a high percentage of cures. The possibility also remains that the converter can, under certain influences, be reverted into the toxin, but the finished antitoxin can never be changed back to toxin. The treatment, therefore, should never be used after recent radium, X ray, or other catalytic exposures. The treatment is most applicable in cases of real cancer, not in cases that have had radiation less than three months previously.

As soon as the toxin is destroyed by the cancer the cells gradually revert back to normal, assume their original polarity, undergo calcification and digestion, the products being absorbed by angioblastic tissue. This tissue heals the deficiencies that might exist.

The material absorbed in the removal of the cancer tissue again renourishes the body being reverted to the same elements as were taken from the blood in the progress of the growth of this tissue. Moreover, whatever stored toxins are liberated from the involuting cancer tissue are also converted to antitoxin.

Reactions occur at different periods after treatment, and these are due to changes in the concentration of the toxins in the blood. Often a reaction with slight fever and aching and nausea develops for a few hours from the second to the fourth day; again from the fourth to the sixth week; about the middle of the ninth week; and during the twelfth week after the treatment is given. The first is due to the rapid decrease in the circulating toxins; the second during the absorption of the growth; and the last two accompany the withdrawal of

the last traces of the poison. Some anaphylactic effects are had because of absorption of bacterial toxins, due to secondary infection. Very often a case clears up with little or no reaction.

## **CASE REPORTS.**

The following cases are given to illustrate: (1) Pregrowth symptoms, (2) Reactions occurring during recovery, (3) Permanency of the cure and (4) Healing of areas destroyed by the growth.

### **Case 1. Cancer of the Uterus.**

Mrs. E .F., age 37. Heredity, negative. Pregrowth symptoms: dizziness and a sensation of falling long distances on closing eyes, for a period of nine years before the growth came. The dizziness let up almost entirely for one year and six months previous to an exploratory operation which revealed a pelvic growth. July 1918, the normal weight was 172 pounds. The first attack of nausea was supposed to be one of appendicitis nausea vomiting and pains that doubled her up. She lost 18 pounds in ten days from this attack. Several attacks followed at intervals with gradual loss of strength and weight. She complained of pains in the back, and there was a change in color to a yellow cachexia. By fall, the patient noticed that the umbilicus was displaced obliquely to the right and was less movable as the left side of the abdomen became raised and hard. She was seen by Drs. Wheeler, Brand, and Park Meyers of Toledo. No treatment helped. She later consulted Drs. George Jones and A. N. Smith, stomach specialists of Toledo, who found a large growth in the abdomen. They called in Dr. Louis Smead, a surgeon, and all decided that an exploratory operation would settle the diagnosis. The operation was performed in June, 1919, at Flower Hospital, Toledo, with the following report: "Found trouble to be cancer of the uterus and in such shape that an attempt to remove it would undoubtedly prove fatal; consequently there was nothing to do but close the wound and keep the patient as comfortable as possible." Prognosis: six months. At this time the body weight had dropped to 97 pounds. Patient kept failing rapidly, vomiting became continuous. pain constant, she became bedfast.

This patient was brought to Detroit, November 17, 1919, as a test case for the Wayne County Medical Society. The weight was perhaps 80 pounds. Record of examination made by the Committee of the Wayne County Medical Society that was appointed to pass judgment on the treatment made at the Herman Kiefer Hosp. of Detroit, Nov. 26, 1919 is: "Palpable mass in lower abdomen extending from pelvis to two inches below umbilicus, about grapefruit size. Uterus fixed, pelvis infiltrated more on left side, and extending on both sides to crest of ilium, cervix smooth, uterus one mass with adjoining tissues:" Signed. Dr. J. H. Carstens, Chairman of the committee.

On admission to the Herman Kiefer Hospital, the temperature 97, pulse 80, respiration 18. The urine was examined Nov. 18, and found to be acid in reaction, to show a trace of albumen and occasional epithelial and pus cells. Nov. 19, the reaction was alkaline, albumen positive. sugar negative, occasional hyalin casts and red blood cells. Dec. 1, the hemoglobin was 65 percent, red blood count 3.010.000: white count: neutrophile 75 percent, small mononuclears 24 percent. During November she received, two treatments of two c.

c. each without any rise in temperature above 99° F. although the pulse rose to 104 and the respiration to 20 during the first reaction. However, the patient suffered severe focal pain. She remained in the hospital until Dec. 19, when the investigation was closed. Rapid improvement set in two weeks after the first treatment, the patient. could get up and walk about a little. The vomiting also had ceased and the pain subsided a gain in weight and in color was recognized. The gain in weight continued to 170, the mass entirely disappeared in the course of a year, normal health being, reestablished.

Recently the Wayne County Medical Society committee, reporting in the Wayne County Society Bulletin on their examination of this patient admitted that the patient is "apparently in good health." Nevertheless that society and the American Medical Association make every attempt to discredit this treatment. The woman is still in perfect health, working every day.

Discussion: The pregrowth symptoms in this case were of the most usual type dizziness coming on when the eyes were not focused on some object. With the development of the growth the dizziness was overcome; but cachexia set in, and this is an effect of the toxin changed by the growth activity. All symptoms disappeared with the cure of the case and the return to normal health. Reactions were without fever, but gave rise to sharp temporary increase in focal pain and tenderness.

## **Case 2. Cancer of the Stomach.**

Mrs. P., of Port Huron, Mich., age 61 in 1919, when accepted for treatment. Heredity negative. Pregrowth symptoms: gastric ulcer symptoms for years. These became constant for the four years preceding the diagnosis of cancer. The statement of Dr. Heavenrich, of Port Huron, who performed the exploratory laparotomy is as follows:

"She was taken ill August 1, 1919, with what was diagnosed gallstone colic. Needed opiates for relief of pain. During the following six weeks had repeated attacks pain, nausea, jaundice. Was seen by several doctors, all of whom agreed in diagnosis and need of operation. I first saw her in September in one of these attacks. I found her emaciated and anemic, suffering severely with gallstone colic, deep jaundice over entire body. Itchy skin, clay stools, and vomiting bile. Unable to retain any food. Temperature 98.4, pulse 118. Abdomen so tender as to make palpation impossible. I also advised operation, and was requested to do so at once. I had her removed to the hospital, where she was operated upon the following morning by Dr. Aldridge and myself. To our surprise we found the liver and gall bladder perfectly normal no stones, no thickening of the duct walls, etc. But the lesser curvature of the stomach was one large sausage shaped tumor, hard in consistency, with some nodules at various spots. So much of the organ was involved, and the patient was in such a weakened condition, that we were both of the opinion that gastroenterostomy or any modification of such operation would be of no avail. We closed the wound and about November first sent her to you. At this time (August 8, 1920) she appears to be in splendid health, does her own work, and eats everything, and certainly is grateful to you."

On admission to the Woman's Hospital, Detroit, Nov. 1, 1919, the patient was fairly well

exhausted. She had lost some 79 pounds in weight. Her weight was 110 pounds. All ingests were vomited and had been for some weeks previously. Blood count showed 3,100,000 red cells, hemoglobin 60 percent. Stools were black and scanty, urine very scanty. Physical examination showed a large tumor mass filling the epigastrium and extending to below the umbilicus and involving the liver. Supraclavicular glands on left side were involved, also the base of the left lung. Left pelvis revealed a mass as big as a fist and smaller masses were found throughout the abdomen.

Three treatments were given at two week intervals. Two weeks after the second treatment the pylorus opened up and food went through thereafter; with consequent gain in patient's health, increase in urine and stools. At this time fever also developed to 104 and lasted a few days, but strength returned very rapidly and patient was able to return home six weeks after her entrance to the hospital. She gained to 187 pounds which she holds today and is in perfect health, six years after treatment was instituted.

In cases of gastric cancer developing on a gastric ulcer, and in cases that have had rodent ulcers for years, the nervous pregrowth symptoms are too mild to disturb the patient. The reactions in this case, as in a fair proportion of the cases, included fever as well as focal pain.

### **Case 3. Insanity and Gastric Cancer.**

Miss L. T., age 38. Normal weight. 104 pounds. Pregrowth symptom, some form of insanity.

In 1920 was confined in an insane asylum for insanity for nine months, after which all nervous disturbances disappeared with onset of gastric disturbance. In March of 1922 she vomited blood and had progressive indigestion with putrid eructations, loss of weight and strength and much pain in the back and abdomen, particularly in the gastric region. Tarry stools and daily vomiting of blood during March and April, when she consulted Dr. G. Field who sent her to Harper Hospital where five X ray pictures were taken, and an exploratory operation performed by Drs. Angus McLean and Y. D. Barrett. A large gastric cancer was found and a specimen removed and sent to the hospital pathologist, Dr. P. F. Morse. Three days later the family was informed that the disease was cancer and nothing could be done. A few weeks later Dr. Pinckert again explored the abdomen and reported to the family that the intestines were covered with the growth, that she could live only a few days, and requested that she be left in the hospital to die so an autopsy could be performed: She was taken home and on August 16th, I was called to attend the patient.

Patient extremely emaciated, the skin literally lay on the bones; unable to hold herself up or raise herself in bed; had no appreciation of surroundings; had taken no food for two weeks, but vomited foul material and blood. Abdomen contained one large mass, size of two heads, lumpy and completely filling abdomen. Family insisted upon my treating patient, in spite of advice that it could do no good. The patient was treated. Gradual improvement set in with complete recovery by September of the following year, when her weight reached 106 pounds. All tenderness and the tumor mass had disappeared and a fair nutrition was re established. Patient is now at work daily and is well, except for attacks of indigestion that follow dietary indiscretions.



Discussion: In this case the pregrowth symptoms were a toxemia of sufficient violence to upset the whole brain activity to the extent that insanity was diagnosed. For a period of over a year preceding the recognition of the gastric disease, but while it was in progress, the nervous intoxication had been overcome quite completely. With the cure of the condition both the pregrowth intoxication and the cancer manifestation were completely cured. The patient was so very sick that whatever reactions might have occurred under the treatment, were masked by the cancer symptoms, and only improvement was noticed.

#### **Case 4. Cancer of the Rectum.**

Mrs. S., age 48. Normal weight around 100 pounds. There was an entire absence of pregrowth symptoms. The patient was well until the spring of 1921, when she started to bleed from the rectum and a progressive constipation set in. Finally pain in the lower spine developed and by spring of 1923, bowel obstruction threatened. She entered the Henry Ford Hospital March 17, 1923, and an operation removing the lower ten inches of the bowel and a cancer mass was removed. Diagnosis by microscope proved it to be cancer. The patient nearly died of shock, but after two months was able to be moved to her home. Her condition rapidly grew worse, bleeding odorous discharge, pain and bowel obstruction returned with violence. Soon cancer masses appeared around and later practically blocked the anus, and the feces came through the vagina. She grew weaker and pain in the upper abdomen associated with vomiting set in.

I was called to see this patient August 7, 1923. I found patient bedfast and thin. Examination of abdomen showed liver enlargement reaching one third distance from ribs to umbilicus and a hard three lobed mass filling the pelvis and reaching from pubes to one finger breadth from umbilicus. Examination of anal region showed the walls of the orifice to be completely covered and closed by cancer tissue so that exploration within the rectum was not attempted. However, through the vagina, a fistula opening into the rectum large enough to admit three fingers could be explored. The recto vaginal wall remnant non elastic, thickened and nodular, the whole area was painful, bleeding and emitting a characteristic discharge.

Treatment was given. A febrile reaction occurred the twelfth week. Recovery was complete in fourteen weeks, except that the recto vaginal fistula was not completely healed until January, 1924. At present she is strong can pass a stool as large as one's thumb, has no pain and stools all come through the rectum. All traces of cancer have disappeared, exploration of the recto vaginal wall can find no abnormality and the patient is perfectly well, except for the loss of sphincter control which we refer to the results of the operation. She is in perfect health today.

Discussion: This case is cited as one of the few examples where pregrowth symptoms could not be elicited, but perhaps more thorough study of the case would reveal a disturbance that could be so classified. The healing of the recto vaginal fistula occurred in this case, as in all others of similar type, and the replacement of the wall was not merely a matter of scarring, but a reconstruction on the same lines as normally existed. The febrile reaction occurring as late as the end of the twelfth week after treatment is a fairly usual occurrence and times the completion of the cure.

Other features of the treatment, as outlined above, will be illustrated in a further study of case histories in a future paper.

Physicians are invited to study the treatment, at the several clinics already established.

## **BIBLIOGRAPHY**

1. Koch Jour. Biol. Chem., 1912, XII, 313.  
Koch Jour. Biol. Chem., 1913, XV, 43 63.  
Paton Quart. Jour. Phys., 1917, X, Nos. 3 and 4.  
Koch Jour. Lab. and Clin. Med., 1916, i, 299.  
Koch Jour. Med. and Surg., Jan., 1918, 1 9.
2. Koch Cancer Journal, October, 1924.

## **PART II**

In a previous paper in this Journal (1) I outlined the fundamental pathology of cancer as an old intoxication, explained the function of the growth as a protective effort at immunity and demonstrated the cure of the disease by a process of conversion of the causative toxin into its anti toxin.

Case histories were submitted to illustrate the pregrowth intoxication symptoms, reactions occurring during recovery, the permanency of the cure and the healing of areas destroyed by the growth. These factors as well as the utilization of the cancer material undergoing absorption as food material for replenishing the body will be further illustrated in this paper by additional case histories.

### **Case 5. Inoperable Cancer of Stomach.**

Mrs. J., of Union City, Michigan, referred by Dr. Hancock and Dr. Grice of Union City, Mich., October 30, 1919. The diagnosis was made by clinical history, by X ray, and exploratory laparotomy.

Past history and status of patient:

Malaria at ten, menses began at twelve, irregular; five children, one abortion at 17. In 1916 the left ovary and five tumors were removed from abdomen. In 1916 Dr. McGregor, of Battle Creek, did a pa panhysterectomy and removed a number of tumors which he said would recur. October 1st. 1919 Dr. McGregor, Dr. Hancock and Dr. Grice did an exploratory laparotomy at Battle Creek, Mich. They reported "recurrent extension of carcinoma throughout lower abdomen and involving stomach and liver; prognosis, three weeks perhaps to live."

Vomiting of blood started in June, 1919 and persisted unto four days after admission into Herman Kiefer Hospital, October 30, 1919 where she was brought nearly dead, as a test case for the Wayne County Medical Society, Wasserman test by University of Michigan Hospital reported negative; X ray and fluoroscopic examination by Dr. Gerstine, of Battle Creek: report, inoperable carcinoma of stomach. Weight loss from 206 to 180 pounds.



Pregrowth symptoms hysterical all her life, after incidence of the growth assuming uraemic type of symptoms; sudden attacks of weakness, smothering sensations, loss of consciousness and convulsions.

Treatments were given November 4th and 7th, 1919. Hemorrhages stopped after several days and recovery rapidly followed, patient discharged from hospital November 26, 1919. She was observed by her physicians, Dr. Grice and Dr. Hancock, who reported her as completely recovered by June 1920. X ray examination by Dr. Gertsine, who gave the first X ray diagnosis as inoperable cancer of stomach, was again made and the stomach found perfectly normal. She is in excellent health today and cured of cancer. The Wayne County Medical Society is fully aware of the cure in this test case.

This case illustrates that the comparatively mild pregrowth symptoms of hysteria due to the causative toxin can be altered by the growth activity on the toxin to become so severe as to cause unconsciousness and convulsions. The case also illustrates what an extensive case of cancer can be completely cured.

### **Case 6. Cancer of Stomach and Liver.**

Mrs. Z, age 53, of Sebewaing, Michigan, referred by Dr. Friedlander, March 1919.

Diagnosis by exploratory laparotomy and clinical history.

Family history Father died of dropsy at age 71, mother died of rapidly growing tumor of uterus at age 71, one sister died of cancer at age 65, one brother died of cancer of stomach at age 63, four children, one of whom died of convulsions in Infancy.

Past history and status of patient Scarlet fever at 6 years of age; La Grippe and Bronchitis, at 25; Repair operation on uterus at 34. Hysterectomy for suspected malignancy, at 47. For 14 years before admission had gastric ulcer, pains before and after eating, occasional vomiting of blood, one half pint at onetime. These symptoms improved somewhat just previous to February 1918; when severe attacks of pain set in, doubling patient up. They recurred every two weeks, were accompanied by vomiting. There was rapid loss of strength and development of cachexia until March 1919, when food was no longer retained. Gastric analysis showed complete achlorhydria, stools were tarry and exploratory laparotomy revealed a large mass of cancer involving the whole stomach and liver and occupying the whole upper abdomen. This laparotomy was performed by Dr. Friedlander at Grace Hospital, Detroit, March 24, 1919. He gave a prognosis of not longer than three months to live. The weight of the patient was 130 pounds.

Treatment was instituted and recovery followed gradually. Cure with return of normal gastric function and complete disappearance of growth was established within one year. It is now 6 1/2 years after treatment was started and the woman is in excellent health. Her weight is 187.

This case, like Case 2 of the previous paper, illustrates that the pregrowth symptoms in cases where cancer develops on an old gastric ulcer are not prominent, that the return of

motor and secretory function accompany the disappearance of the disease.

### **Case 7. Primary Cancer of Liver.**

Mrs. V., age 47.

Diagnosis by clinical history and exploratory laparotomy.

From Plainwell, Michigan, referred by Dr. C. M. Stuck and Dr. McNair of Kalamazoo, Michigan, February 3rd, 1920. Family history negative.

Past history and status of patient.

Fairly good health all her life, except for over twelve year of dizziness on retiring, blind spells and teichopsia with fortification spectra. These symptoms let up almost completely by January 1919, but shortly afterwards pains developed in the abdomen and under the right shoulder blade. Vomiting set in. Emaciation and jaundice and the inability to turn in bed, because of the presence of a large sore lump below the ribs on the right side, brought her to the surgeon. Laparotomy was performed January, 1920, by Dr. McNair and Dr. C. M. Stuck, with findings as in following report: "This is to certify that Mrs. D. M. V. was operated upon January, 1920. We found the liver enlarged and nodulated and much swollen and, in our opinion, it was cancer. Closed the wound and at different times (after the Koch treatment) I have examined her and on March 12, 1921, could find no swelling, soreness or abnormal condition. This examination was done at Dr. McNair's office and he also found conditions as described on these examinations." Signed C. M. Stuck. M. D.

On admission, the patient was found to have a large mass continuous with liver and extending down into the right pelvis and across the epigastrium, beyond the midline. She was nearly bedfast, weighed perhaps 80 pounds, was jaundiced, vomiting frequently, and was in severe pain.

Treatment was instituted and recovery was gradual, perfect health being regained by the spring of the next year, as indicated in the above report of her surgeons. She is still in perfect health and free from pregrowth and cancer symptoms, present weight varies around 130 pounds.

This case illustrates the more usual type of nervous pregrowth symptoms, as well as the growth period symptoms and that both disappear with the cure of the disease.

### **Case 8. Cancer of Stomach.**

Mr. S. (age 54, of Detroit, referred by Dr. Morey.

Diagnosis, by clinical history and physical examination.

Family history negative to cancer.

Past history and status of patient:

He had been in fine health all his life, with the exception of dizzy spells for a period of five years before his stomach started to trouble him. In the fall of 1921, attacks of pain in the stomach set in that made him stop work and he frequently had to be taken home on this account from the Ford Motor Plant where he worked. By April 1922, he became bedfast and was under morphine treatment by Dr. Caughey until I was called by Dr. Morey to treat him on July 25th, 1922. Patient at that time was practically moribund, had been vomiting blood and debris for several weeks, a mere skeleton with skin hanging over the bones. He had not been able to swallow water or even saliva for some three weeks, because of blocking of the, oesophagus by the extensive mass of cancer. Examination showed pupils to react paradoxically, the mass distended epigastrium and projected 1½ inches further out than the ribs and extended to below umbilicus. The patient was only partly conscious, too weak to turn in bed.

Treatment was given under protest that it was too late. Recovery, however, was rapid. Ten days later, although the patient had taken no food, he was able to get out of his bed and crawl to the pantry and eat a bowl of beans. This gave rise to severe cramps. It was the first food he had taken in over a month. Thereafter recovery was steady and by November he was able to resume his work at the Ford Motor Plant, having gained in weight to 139 pounds from a possible 60 pounds when first treated. Examination at the Ford Hospital in October, 1922, found him perfectly normal. The large mass of cancer had completely disappeared and healed. He is in perfect health today with complete absence of pregrowth or cancer symptom.

This case illustrates the usual pregrowth symptoms and is particularly valuable in demonstrating the great nutritional value of the cancer tissue as it undergoes digestion, returning to the blood stream those elements in useful form that it took from the blood stream to build up the growth. For without the ten days of nutrition gained from the involuting cancer tissue, the absorption of which returned patency to the oesophagus, this fellow could never have crawled to the pantry to obtain food, or have swallowed it.

### **Case 9. Carcinoma of Larynx:**

Mr. C. F., age 54, weight 197 pounds, normal weight 206, admitted November 26, 1923.

Diagnosis by clinical history, physical examination and microscopic specimen.

Past history and status of patient:

Well all life until three years previously had a nervous breakdown. Pregrowth symptoms of years of dizziness that did not respond to the treatments given and persisted until hoarseness and pain in throat commenced in May 1923. On November 2, 1923, specimen was removed by Dr. Simpson at Harper Hospital, Detroit, and microscopic examination by the hospital pathologist proved it to be cancer. The specimen was reviewed at the University of Michigan and confirmed to be cancer. Gross diagnosis by Dr. Canfield at Ann Arbor was cancer, Recommendations were made by several surgeons that tracheotomy be

performed, as the growth was obstructing breathing and dyspnoea was severe. Difficulty in swallowing had set in and speech was reduced to a faint whisper. Examination showed both vocal cords involved by carcinoma and large extensions involved the glands of both sides of neck, largest mass in left cervical glands, size of one's little finger.

Treatment was given and recovery was rapid, speech returning and the dyspnoea subsided and ability to swallow returned. All masses were cleared up in twelve weeks and the body weight improved to 225 pounds in that time, and examinations by a number of surgeons, found the patient cured. He is in perfect health today, speech normal, has been lecturing for a living for the past year.

This case again presents the usual pregrowth symptoms of dizziness subsiding with the advent of the growth, and the sufficient repair by the healing process to permit return of function.

### **Case 10. Cancer of Breast, with Paget's Disease.**

Mrs. C. P., age 47, weight 110 pounds, normal weight 130.

Diagnosis by clinical history and physical examination.

Family history negative as to cancer.

Past history and status of patient:

Patient stated she was well all her life, except for rheumatism several years previously. Had had the usual pregrowth dizziness for ten years before the growth came in the breast, at which time the dizziness disappeared. In March, 1919, pain started in the right breast and shoulder and shortly was severe in region of right shoulder blade. Sleep and work was thereby interfered with, very tired all the time, lost 70 pounds in weight by November, 1919, and because of shortness of breath and severe coughing, had difficulty in climbing stairs.

She had been treating with Dr. James Davis, a surgeon and pathologist, who gave the diagnosis of Paget's disease and recommended a radical operation that might, he stated, permanently result in the loss of use of the right arm, but could not promise a cure. She refused operation and presented herself for treatment November 5, 1919. At this time my examination revealed that the right nipple had largely eroded away and the areola was largely involved by a typical Paget's disease. Behind the nipple was a hard mass attached to skin and parietes about the size of an egg, another mass at the inner end of the third Interspace and a mass slightly smaller than the first in the anterior axillary border and attached to skin and parietes about the size of an egg, another mass and involving the pectoralis major muscle, smaller masses deep in the axilla and supra clavicular space could be palpated. There was evidence of pulmonary involvement on the right side, as well as of the subscapular glands. Treatment was instituted and immediate improvement noted. She was observed during her recovery at intervals by Dr. Davis, until he stated on July 26, 1920, that she was cured. She has gained in weight to 188 pounds, all masses

have disappeared, the nipple has healed and perfect health is restored. She works hard every day and remains cured. This case, with affidavits proving the diagnosis, was submitted among others to the local medical society.

Discussion: This patient's recovery demonstrates the complete disappearance of all symptoms of the disease, the pregrowth intoxication, as well as the cachexia symptoms of the growth period.

### **Case 11. -Sarcoma of Brain.**

Mrs. T. R., age 85.

Normal weight 209, weight on admission about 70:

Diagnosis by clinical history, X ray and physical findings.

Family history negative as to cancer.

Past history and status of patient:

She had a fever in Russia many years before, but was well otherwise until the present illness began in the summer of 1921. There were no pregrowth symptoms. The trouble started as headache, interference with vision and a gradual loss of the use of the right arm. By November, 1921, she consulted a doctor and in December, 1921, she was taken to Harper Hospital at Detroit, where the cranial nerves were all studied and a piece of the skull as big as the palm of a man's hand was removed from the side. A diagnosis of brain tumor was made, and two deep X ray treatments were given. Her condition became worse: When she left the hospital two weeks later, the relief of pressure obtained by the decompression, had given way to recurrence of the pain and paralysis. At this time the scalp was not raised at the decompression area, but after her return home, a gradual swelling of this area was observed. This increased until in July, 1922, when I was called to see the patient, a hard mass as big as a grape fruit projected from the decompression area, and a new mass as big as a fist had developed in the dorsal spine. The patient at this time was reduced to a skeleton, completely paralyzed, blind, able to speak, and there was persistent projectile vomiting of the most severe type; her headache was terrific. This was seven months after the X ray treatments had been given, and the patient was about to die. She had lost so much weight, that her husband carried her about like a child.

She was given treatment and rapidly recovered. All traces of growths completely disappeared in five months, all paralysis, vomiting and blindness disappeared and her weight was restored to 180 pounds. In another ten months her weight reached 220 pounds, where it stands today. She is in perfect health, working hard every day. The bone removed from the skull has now been nearly completely replaced.

This case well illustrates the tendency after this treatment to re-establish the normal health.

**Case 12. Sarcoma Involving the Spine and Whole Abdomen:**

Mrs. J. W., age 43, weight 85, referred by a cured patient, August 18, 1922.

Diagnosis by clinical history, exploratory operation and specimen findings.

Past history and status of patient:

Had been ailing for about seven years with dizziness and blind spells, which let up just prior to 1920, when disturbances referable to pressure within the abdomen developed. At this time her legs started to swell and severe attacks of pain that doubled her up, came at intervals. These attacks finally became rather frequent and were diagnosed as attacks of intestinal obstruction. At this time, she could feel the growth that distended her abdomen and was referred to the surgeon for operation.

An exploratory operation was performed by Dr. Angus, McLean and Dr. Francis Dufeld at Harper Hospital on August 7, 1922. A specimen was removed for microscopic diagnosis and the wound closed without any attempt at removing the growth, which was found to extend throughout the abdomen. The surgeon thought she might live ten days and she was taken home to die. Her strength rapidly failed and in ten days she could not longer raise her hands to feed herself. At this time I was called to treat her. Examination showed a large mass distending the abdomen and extending from the ribs to deep in the pelvis. Its size was much larger than a man's head. Both legs were swollen enormously. The patient was in great pain and very weak. The family was advised that it was most likely too late to obtain any results from the treatment, but they wished to take a chance, so treatment was given. Recovery was gradual. She was back to her household duties within five months and is in perfect health today. All traces of the mass have disappeared, the swelling has long since left, and her natural vigor has returned. She is in perfect health and is cured.

Discussion: This was a case of small round cell sarcoma, as proven by the microscope. Its extent was exceptionally great. The patient's physical condition was, decidedly unfavorable, and yet complete recovery, followed the treatment. All pregrowth and growth symptoms have disappeared. It is therefore evident that the material injected into the patient was able to remove the essential pathology, as in carcinoma. Both diseases are therefore fundamentally identical.

**Case 13. Sarcoma of Tibia.**

Dr. W. E. L., age 65, weight 129, referred by Dr. W. A. Dewy.

Diagnosis: clinical, and by X ray.

Family history negative as to cancer.

Past history and status of patient:



Well all his life. In the winter of 1920, after an injury to the left leg, a painful swelling developed, that by March, 1921, involved the whole upper half of the tibia. Radiographs showed the condition to be sarcoma of the bone, one surgical friend suggested curetting the bone and another amputation at the hip, but none of these procedures appealed to the patient, who is a doctor of wide experience. Examination in March, 1921, revealed considerable rough thickening of the upper half of the tibia, with changes in adjacent parts of the fibula of the left leg. These were verified by the X ray. The whole leg was swollen and painful and walking only possible through help of support. Treatment was given and recovery gradually took place. After four months recovery was complete. He is perfectly well today, there were no pregrowth symptoms elicited in this case.

Discussion: This case is cited to illustrate one of the few sarcomas that developed without pregrowth symptoms, and corresponds to the very small portion of cases of carcinoma that give no history of pregrowth intoxication. However, a careful examination of the history of this case might reveal symptoms that could be so classified.

#### **Case 14. Small Cell Sarcoma.**

Mr. B. J., of Plainwell, Mich., age 52, weight 147 pounds.

This involved the left groin, the left thigh and all the organs of the abdomen.

Diagnosis: clinical and by microscope.

Family history negative as to cancer.

Past history and status of patient:

Influenza in 1891, scarlet fever and diphtheria when young. Pregrowth symptoms dizziness came five years before the growth, during the fourth year was very bad, would fall over and lose control of himself, with blindness, on looking up, on turning off light on retiring, things would go around and go around; if he fixed eyes on an object, it would sway. There were no headaches. These symptoms started to let up four months before the growth was noticed. January 9; 1922; he noticed lump in left groin, size of a lima bean. It grew rapidly and in three weeks was as big as a goose egg. It was removed on or about February 4, 1922 by Dr. McNaire. The disease returned after the second X ray treatment given at the Battle Creek Sanitarium (Kellogg's) by Dr. Case. The first X ray treatment was given about March 5, 1922, and the second one about three weeks afterward. The recurrence was noted early in April, with pain and the spreading of the mass through the abdomen, also swelling in the leg. The opening left from the operation grew deeper and urine drained through the side. The third X ray treatment was very heavy. This was given two weeks after the second, and another three weeks later. The growth grew more rapidly than ever, and in August on his first appearance here, the abdomen was found to be distended with a mass reaching above umbilicus on both sides, farther on left. There were liver masses, leg was swollen all the way down, the penis and the scrotum were enormously edematous, pains were present all the time, worse on motion and extended through both sides of the abdomen, to the small of back, down the left leg and thigh and up the left side and they

were also in the right chest and liver and in the right arm and shoulder. Patient reported severe attacks of asthma. A corrupt odorous bloody discharge issued from the open sarcomatous area in left groin. Diagnosis made from tissue removed was Sarcoma.

During treatment, dizziness recurred and the asthma was worse. The pains gradually disappeared with the disappearance of the growth and the healing of the open lesion. The swelling and oedema in various parts all left, the dizziness and the scotoma all disappeared within twelve months.

On examination in fall of 1923 he was found to be apparently cured. Examination April, 1924, showed all disease removed. An examination in March, 1925, confirms the cure.

Present condition of leg It swells below the area of the X ray application, especially after walking around all day (attributed to lymphatic injury, caused by the X ray). He gained in weight from 147 to 185 pounds.

Discussion: In this case as in the preceding case of sarcoma of the brain, the X ray treatment made the disease grow more rapidly and spread it even after the surgical removal. It did not even prevent recurrence, but more exactly hastened the spread of the disease. Thus the essential pathology does not seem to lend itself, to X ray therapy.

The characteristic pregrowth symptoms likewise are those so frequently met with in carcinoma and the immunity effort of the growth is to some extent effective, as in carcinoma, since here as in carcinoma, these symptoms were nearly abolished when the growth came.

As the large mass of sarcoma was absorbed, it unloaded its stored pregrowth toxin in sufficient concentration to cause again the pregrowth symptoms while this toxin was undergoing change into antitoxin.

## **GENERAL DISCUSSION OF CASES**

The persistence of the intoxication of the pregrowth period, as expressed in dizziness, momentary loss of sensory perceptions, is present alike in sarcoma and in carcinoma, and when the growth comes, this intoxication is much lessened or abolished. The exceptions are the few cases where rodent ulcer or gastric ulcer are present to represent the pre-cancer symptoms, that the nervous type of symptoms are not prominent, and where in some few cases even after the growth comes, the pregrowth symptoms are not ameliorated, but may even get worse.

The true pathology of cancer is the same, whether carcinoma or sarcoma be the lesionary expression of the disease. Likewise the attempted function of both is identical.

Both types of cases cure up equally well on the same treatment, and the identity of the fundamental pathology is thus established in both.

The effort at protection of the body against the causative toxin, therefore, does not depend

upon the histological structure of the tissue as a selective feature, but depends upon some other influence, as for instance, the exposure of the tissue that undergoes the change, to a higher threshold value of excitation by the toxin. And this would occur where irritation and prolonged congestion of the tissue allowed a greater amount of toxin to flow through the tissue in unit time over a sufficient period to bring about change. The only favoring selective feature about the tissue must rest with its functional inertia; and tissues occupied with steady physiological work and under the restraints of physiological control, would be less likely to alter their direction of activity than tissues at rest, like the uterus or mammary gland.

That the cancer tissue is very satisfactory food material is shown in "Case 8" where the absorption of the growth gave sufficient nutrition to so replenish the exhausted patient as to permit him to crawl some twenty feet to the pantry, when ten days previously he could not turn over in bed, for in this period he took no food. Correlarily, the obstruction of the oesophagus which was complete for over a month previous to the treatment, had given way during these ten days of absorption of the growth so that he could swallow the beans after crawling to the pantry. Thus the material from which the growth is built up, is again returned to the blood stream as physiological nutritional units. Therefore the process of involution of the cancer tissue depends upon the reversibility of the reaction of cell synthesis, and is a purely physiological affair, proving, that the treatment administered has no direct destructive action upon the growth, but as our premises state, the treatment removes the requisite for cancer growth, and is therefore fundamental.

More features will be submitted in another paper. Physicians are cordially invited to study the treatment of adoption.

### **PART III**

In the preceding papers published in this Journal (May and July 1926) cancer was demonstrated to be a protective response against an old intoxication by a definite substance. Case histories were detailed to illustrate the effects of this poison in producing pregrowth symptoms which affected the 'central nervous system. The toxin was proven to be the same in both carcinoma and sarcoma and the process of recovery under our treatment was illustrated through case histories.

The present paper deals with the causative intoxication, as expressed by certain syndromes that are generally classified as idiopathic diseases. Thus the symptoms of the pregrowth intoxication may be simple goitre or toxic goitre, a gastric ulcer, a migraine or arteriosclerosis.

### **CANCER OF UTERUS**

#### **Case 15. Cancer of Uterus**

Mrs. M., age 48. Family history negative to cancer.

Past History: Well all her life until her children came, thereafter poor health. There was some dizziness. An ovary and the appendix were removed by Dr. Max Ballin of Detroit, in

1918. The left breast was removed by the same operator in 1919. The dizziness increased, neuritis set in, and the thyroid gland enlarged some; nervousness; tremors, exophthalmus, and loss of weight were mild, but noticeable. In 1920 she began to suffer pain in the lower back. There was a bloody discharge from the uterus. In February 1922, she had a severe uterine hemorrhage. Thereafter the thyroid enlargement and thyrotoxic symptoms greatly increased. She consulted Dr. S. C. Runnells and Dr. Rubin Peterson of the surgical staff of the University of Michigan in May 1922. Both made a diagnosis of cancer of the uterus, far advanced. Dr. Peterson told her, she reports, that unless she were immediately operated upon, she would not live ten days. She refused operation and came to me for treatment the following day.

I was impressed at a glance that the case was one of extreme thyrotoxicosis. The patient was bordering on collapse: after resting several hours, pulse irregular, 460, respirations 38 per minute. Exophthalmus marked, Stellwag's and Greefe's signs positive, sweat, tremor and high pulse pressure. Loss of weight 16 pounds last month, weight less than 104 pounds. Left lobe of thyroid moderately enlarged, several bean to peach stone size tumors in left supraclavicular space, close to the thyroid. Axillary glands on left side slightly enlarged, several small tumors below clavicle on left side over operation area, about size of breast amputation. Cardiac dullness increased and apex beat shifted toward post axillary border. Heart action tumultuous, functional murmurs, liver enlarged.

Uterus, fixed, enlarged to size of grape fruit, reaching halfway to umbilicus. Cervix, nodular, 2 inches wide; hard, purplish; ulcerated, a typical carcinoma appearance, a bloody foul discharge. Complained of pain in legs, back and abdomen; painful micturition and difficulty at stool. Treatment Instituted, and recovery completed in four months, with disappearance of all thyrotoxic symptoms, gain of weight to 142 pounds, disappearance of all thyroid enlargements and masses thereabout, and return of uterus to normal. At present she reports better health than she has enjoyed for many years; holds a gain of 88 pounds.

Discussion: In this case the thyroid effort let up when the toxin causing the cancer was removed by the cancer treatment, and the toxin must therefore, have been causal to the thyroid condition, as well as of the cancer.

### **Case 16. Simple Goitre and Cancer of Bowel and Uterus.**

Mrs. S., age 85, normal weight 152 pounds, referred by Rev. R.

Family History, Father had sarcoma of right knee. .

Past History: Tonsillitis periodically for years.

Pregrowth symptoms and status of patient: An enlarged thyroid gland for past 6 years, that increased in size with onset of rectal trouble, some dizziness throughout this period, with short blind spells, which let up during the last year. She had suffered with piles for years, was operated for them nine years ago and again three years ago. Later treated by Dr. Mowry for a time, but as the trouble got much worse, he referred her to a surgeon, Dr.

Thompson, who made a diagnosis of cancer and refused to accept the case. This was in November 1922. Applied to me for treatment Dec. 15, 1922. She had suffered severely for several months, pain in back and down the legs, bleeding from rectum and vagina, great difficulty of bowel movement, and finally the passage of all fecal matter through the vagina, plus a discharge of blood and pus. Weight on admission 125 pounds, anemic and weak:

I examined her on Dec. 15, 1922: it was impossible to explore through the anus, as this was blocked by a mass of cancer. Vaginal examination revealed a hard nodular posterior wall, with a hard nodular fistula opening into the rectal cavity, large enough to admit two fingers. The cancer mass extended to and involved the uterus which likewise was nodular, greatly enlarged, hard and immovable.

Treatment was given; recovery complete in five months, bowel movements passing through the rectum without pain. Within 9 months the recto vaginal fistula was completely healed all signs and symptoms of cancer, and the thyroid enlargement having, completely disappeared. Her weight returned to normal and perfect health remains reestablished. She was examined by a number of doctors who could not understand the healing of the recto vaginal wall without scar formation, and with perfect return to normal structure. She remains cured.

Discussion: This case is cited to show a very common thyroid enlargement preceding, and persisting with the development of cancer, which disappeared after the cancer treatment was given. The thyroid enlargement can be aptly referred to an effort on the part of the gland to work against the cancer producing toxin, as this enlargement disappears with the removal of the cancer poison.

### **Case 17. Goitre and Cancer of Uterus.**

Mrs. M., referred by Dr. Geo. Hale, February 1922.

Family History negative.

Past History: Patient reports she was well all her life until enlargement of neck came on several years previously. She had had some dizziness in the past, but this was not noticed recently. One year ago she had severe uterine bleeding. A curettement for diagnostic purposes that proved the condition to be cancer and an operation with attempt at removal were performed by Dr. Wellington Yates. This procedure only aggravated the condition. During the last six weeks there was bleeding and discharge from the uterus; she daily vomited blood and could retain no food. Examination Feb. 6, 1922, revealed patient to be very emaciated. There was an enlargement of the thyroid region, which doubled the size of the neck, the right eye bulged and turned outward, the right arm was in constant tremor, large areas of consolidation were in the chest. The abdomen was one lumpy mass of cancer continuous with the uterine mass, that bled and discharged a putrid fluid. The patient was still vomiting blood daily, often a pint at a time, she reports. She complained of terrific headaches, that had persisted for a number of years.

Treatment was instituted, recovery by June, 1922, with return to normal weight, the eye returned to its normal position, and the arm to proper nerve control, thyroid enlargement disappeared, also the masses in abdomen and pelvis, with healing of the vaginal vault. She was treated again in October, 1922, and has been normal in all respects and at work as a nurse ever since.

This also illustrates the relation of goitre to cancer and demonstrates how severe a case can be cured.

### **Case 18. Goitre, Senility and Cancer.**

Mrs. B., age 85.

Family History, negative to cancer.

Past History: Well all her life except for last few years she had had a very marked bladder disturbance with passage of bloody urine, pregrowth symptoms of dizziness and a tendency to drop with blind spells. The thyroid gland had been moderately enlarged for last thirty years. A cancer of tongue started as a sore spot on the right side in January, 1922. This was examined by Dr. McCormick and Dr. Murphy of Toledo, Ohio. A specimen removed at St. Vincent's Hospital, Toledo, proved to be cancer tissue. Radium was applied twice, with slight improvement, then rapid aggravation, so that by May 1922; her family physician, Dr. Willett, of Elmore, Ohio, sent her to The University Hospital at Ann Arbor, Mich., that something might be done quickly. Here she was examined by Dr. B. Canfield, she reports, who found her condition hopeless and refused to do anything but give her morphine.

She came to me for treatment on the next day. My examination, May 23, 1922, found the patient emaciated, arteries sclerotic, an arcus senilis, the whole mouth full of cancer so that it could not be closed, a foul bloody discharge, the whole tongue one mass of cancer, impossible to talk, or eat, pain terrific, metastases to glands on both sides of neck, the thyroid enlarged to twice normal size. There was a mass in the pelvis; presumable a bladder tumor, bloody urine, and painful micturition.

Treatment was given, recovery was rapid, all cancer tissue and discharge had disappeared with complete healing by July 7, 1922. In November 1922, her recovery was demonstrated to the doctors at the University, who had refused to take her case, having believed she was a hopeless case. They found her all healed and cured, they admitted. She remains cured and is in perfect health, round and fat, with elastic arteries and the arcus senilis has disappeared.

Discussion: This case illustrates that a goitre of thirty years standing and senile manifestations disappear after this treatment for cancer, which indicates that the cancer causing toxin was present in her system for a long period before the growth came and was responsible for the senility changes, and the goitre, for these, as well as the cancer, all disappeared with the cure of the cancer.



**Case 19. Goitre senility and cancer.**

Mrs. R., age 57.

Family History: Father died of erysipelas, age 39, mother died of a stroke, age 72, no history of cancer in family.

Past History: Well all her life until May, 1923, when present illness set in with pain across abdomen.

Pregrowth symptoms of dizziness and transient blind spells for about eight years before growth came. Some dimness of vision for the last few years getting worse. The doctors claimed she had high blood pressure. Moderate goitre.

Status of patient: After some months of pain in abdomen and back she was examined by Dr. Phillips, her family doctor, who made a diagnosis of cancer of the uterus. Went to the Mayo clinic in June 1923, where a diagnosis of cancer of the uterus was made and radium and X ray treatments given. The husband was told by the Mayo surgeons that they could not cure her. Condition grew worse during the next six months. She applied for treatment here on November 6th, 1923.

Examination revealed a large mass of cancer filling the abdomen men below the umbilicus and extending above the umbilicus one and one half inches on the left side. The vaginal vault was widely distended by the mass. No cervix could be differentiated from the rest of the mass. Discharge, bloody and muco purulent, moderate arcus senilis, arteries hardened and somewhat nodular, lenses opaque. She complained of marked bladder disturbance and pain. She had lost in weight to 115 pounds. There were areas of pigment over sides of neck, cheeks, forehead and several over abdomen.

Treatment was given and recovery took place rapidly, gained in weight 3/4 pound per week until 168 pounds was attained The whole cancer mass had disappeared in six months and perfect health was reestablished. All senile changes had likewise disappeared, as well as the goitre and areas of pigmentation. She is in perfect health today.

Discussion: This case is cited to illustrate that with the cure of disease, the removal of the causative agent, all toxic and senile changes are disposed of. This case confirms further the relation of goitre and senility causing toxin to the genesis of cancer.

**Case 20. Goitre and Cancer of Prostrate.**

Mr. R., age 75.

Family history negative to cancer.

Pregrowth symptoms; had blind spells for 15 to 20 years became dizzy on looking up or going up. Blind spells and difficult vision off and on for distances that should ordinarily be

easy. This all let up during the last two years. Enlargement of thyroid moderate, but noticeable for many years.

Status of patient: Started losing weight three years ago from 166 to 138 at present, with development of nearly complete bowel obstruction, never passed blood from bowel; greatest loss of weight in last few months, cachexia and suffering very severe pain. Examination showed the liver enlarged to halfway to umbilicus, mass extending up from pelvis to two thirds way to umbilicus. Rectal exploration revealed small rough, patch size of dollar on posterior wall, and an enormously enlarged prostate mass extending beyond reach of examining finger, continuous with the mass extending into abdomen, which also obstructs the sigmoid.

Treatment given, recovery complete with complete return to normal health in 8 months. All masses and also the goitre enlargement have disappeared and prostate returned to normal size and structure.

### **Case 21. Goitre and Cancer of Rectum.**

Mrs. J., age 38.

Family History: Father had cancer of lip. Past History: Well all life until present complaint.

Pregrowth symptoms and status of patient: Goitre for some five years, only moderate enlargement. Dizziness with blind spells for 12 years, let up some months ago. Rectal trouble started as bleeding from bowel, continuous for a week at a time in spells, caused some anemia. Two years ago developed pain in the back and right hip. This grew rapidly worse, so that it drove the patient out of bed and seriously interfered with sleep. Eight months ago the pain shooting up the spine became intolerable. A bloody purulent foul rectal discharge then developed, and for the five weeks before admission, bleeding was profuse, a cupful a day, patient reports, bowel movements practically obstructed with terrific pain at stool, bladder, very irritable, with sensation of heavy pressure and frequent urination, patient rapidly failing.

Examination November 28, 1922. Marked cachexia, Hemoglobin 16 percent, lips bloodless, slight exophthalmus, marked tremor, fair increase in thyroid, mass in right supraclavicular space size of walnut bound down hard nodular, pulse 148, respiration 30, heart dilated, functional murmur, liver enlarged and nodular extending two inches below costal border. Large growth filling abdomen below umbilicus, with egg and orange size masses extending above umbilicus. Rectal examination revealed foul bloody discharge, a large carcinomatous ring occupying nearly the whole rectal wall, with central nodular depression and continuous with carcinomatous mass occupying the belly.

Treatment given and recovery complete, with disappearance, of all masses, thyroid enlargement, healing and reestablishing of normal rectal contour and structure, return to perfect health, H. 90 per cent, perfectly strong and well, February, 1921. She is still in perfect health and cured.

Discussion: In this case also the thyroid enlargement existed for years before the growth came, but the pregrowth intoxication symptoms did not let up because of the thyroid effort. The whole condition cured up only after the cancer causing toxin was removed by the treatment.

## **Case 22. Goitre and Cancer of the Bladder.**

Mr. R., age 65, referred by Dr. St. John.

Past History: Well until urine shut off in July 1921.

Pregrowth symptoms and status of patient: Thyroid enlargement for years, no history of toxin symptoms, operated at University of Michigan Hospital, August 16, and 19, 1921, by Dr. Beebe, superpubic drainage established and diagnosis of cancer of bladder confirmed. Relief obtained through the superpubic drainage, but cancer kept growing, until obstruction of bowel threatened in fall of 1923. Came to me for treatment December 21, 1923, complaining of swelling and pain across abdomen and painful passage of bloody urine through the superpubic opening, loss of weight 15 pounds. Examination revealed rectum occluded by a large mass continuous with the mass filling lower abdomen to level of umbilicus. Treatment was given and recovery, with complete disappearance of goitre and all cancer masses and restoration of perfect health by summer of 1924, the urine being passed through penis without difficulty. He is in perfect health today.

Discussion: This case also demonstrates the relation of the goitre to the pregrowth intoxication and in this case the thyroid effort might possibly be credited with suppression of the symptoms usually present, before the growth appears.

## **GENERAL DISCUSSION OF CASES**

The fact that a single chemical substance that converts the toxin, causative to cancer, into its antitoxin, thus removing the cause of cancer and producing immunity to cancer, also causes to disappear certain symptom complexes that have preceded the development of cancer, clearly indicates the identity of the cause of cancer, with that of the other conditions. Thus toxic goitre, some instances of simple goitre, and sclerotic changes affecting blood vessels, the cornea and lens and the prostate have the same etiology as cancer.

The thyroid response is a self protective one. I do not infer that the toxin at the bottom of cancer is the only one to which we may have a goitre response. We have simply demonstrated here that the toxin causing cancer will bring about a response on the part, of the thyroid gland, which does not materially protect the body against the toxin and does not prevent cancer from developing. The thyroid response may be excessive and all the symptoms of toxic goitre be present. The thyroid response may show exhaustion in that its function is hampered, and the symptoms of myxedema arise, as in the case of Mrs. B., (Case 27). Removal of the toxin reestablishes normality, and the gland returns to its original physiological activity. Therefore, the toxin causing cancer acts injuriously upon the thyroid so long as it is present and the thyroid response is directed toward its own

protection.

## **GASTRIC ULCER AND CANCER**

The next four cases will show that gastric ulcer, duodenal ulcer, and rodent ulcer are likewise responses to the toxin that causes cancer, occurring in tissues not able to withstand the destructive effect of the toxin, nor yet able to give a reproductive response as occurs in cancer. Such ulcers may become the site of a future malignancy, or the growth may develop in some other part of the body, as in the case of Mr. M. (Case 23). In these cases there are other symptoms of the presence of the toxin that causes cancer. The ulcer then is but one sign of the presence of this toxin.

### **Case 23. Gastric Ulcer and Cancer of. Colon.**

Mr. M., age 54, referred by Dr. Geo. Hale.

Family History, Negative to cancer.

Past History: Well except for gastric ulcer of ten years' standing. Pregrowth symptoms, gastric ulcer ten years, let up one year ago.

Status of patient: Diagnosis of gastric ulcer at Henry Ford Hospital 8 years ago by X ray and clinical history, no relief therefrom until one year ago he noticed a change in symptoms. There was progressive difficulty in moving the bowels for the last six months, bloody and tarry stools, two tender classes developed, one in the right lower abdomen and the other just below the ribs on the same side. He could feel disturbances there as gas and material seemed to work through the intestine, pain was very severe. Examination by Dr. Hale and X ray examination by Dr. Meinke, July 1924, resulted in a diagnosis of cancer of the ascending colon, widespread and causing nearly complete obstruction. The loss of weight was 17 pounds in last two months, the pain was terrific at night and for last 8 months he was rapidly getting weak.

Treatment given September 5, 1924. Recovery was complete with normal bowel movements and a disappearance of the growth in four months. The patient reports that the stomach functions better than for the last ten years. He no longer has any symptoms of ulcer.

Thus we see that the condition of gastric ulcer may, serve as a pregrowth symptom to cancer of a different organ. Both conditions are cured permanently by removing their common cause.

### **Case 24. Gastric Ulcer, Senile Changes and Cancer.**

Mr. D., age 62, normal weight 150.

Family History negative to cancer.

Past History: Typhoid when 16 years old. Pregrowth symptoms; occasional blind spells, staggers and dizzy spells for 18 years. These symptoms all let up during the last year.

Status of patient: Stomach has bothered him for the last 20 years, periodical attacks of pain, required black pepper and whiskey to stop attacks and carried a supply for that purpose; frequent hyperacidity, weak spells followed by periods of tarry stools. By February 1924, the attacks had become so severe that he had to be carried home from work and with each attack he vomited bright blood. The last attack was on August. 16, 1924, when the patient became bedfast, could no longer take food, and vomited blood and corrupt matter. Examination on August 25, 1924, found the patient bedfast, unable to walk 20 feet, dim vision, arcus senilis, arterio sclerosis, cachectic, emaciated, in terrific pain, pulse weak 150, had been vomiting blood.

A mass in abdomen filled the epigastrium to the umbilicus, the supraclavicular gland on left side, size of large walnut, was hard, nodular and tender. Diagnosis; extensive gastric carcinoma developed on old gastric ulcer. Treatment was given and recovery, with complete disappearance, of all growths, a return of normal strength and gastric function and able to be at work by December 1924. The arcus senilis and arteriosclerosis have practically disappeared. He remains well and has had no attacks of trouble referable to the old gastric ulcer. The stomach functions normally. Thus, he is cured.

Discussion: This case demonstrates a very far advanced cancer of the stomach developing on an old gastric ulcer, and the presence of senile changes, all of which cleared up when the basic cause of the disease was removed.

### **Case 25. Gastric Ulcer and Cancer.**

Mr. F., age 38.

Family History, negative to cancer.

Past History: Measles and chicken pox in childhood, pneumonia at 20 and again 4 years ago.

Pregrowth symptoms and status of patient: Stomach trouble started as indigestion when 16 years of age always taking soda. Operated on in 1913 by Dr. Wm. Campbell, of Pittsburgh, for appendicitis, the appendix was found normal; operated on in 1914 by the same surgeon for gastric ulcer, who resected two small and one large ulcer and made a gastroenterostomy; no relief. He kept taking soda continually, the stools black, had pain and gas, was unable to straighten up for years, the pain extended through the epigastrium to the back. He was careful about diet to date of admission, was very nervous all the time. In the year 1920, his weigh dropped from the normal of 166 to 136. On January 8, 1920, he had two severe gastric hemorrhages that left him nearly bloodless and cold. Tarry stools were passed for several succeeding days. An examination on January 12, 1920, revealed a mass the size of a fist in the epigastrium. Treatment given and recovery was complete in 4 months with disappearance of all stomach trouble and the mass in abdomen. He now weighs 197 pounds and is in the best health he ever experience; stomach functions

perfectly on any diet

Discussion: Thus gastric ulcer is really a pregrowth cancer symptom and replaces the usual nervous symptoms of dizziness, etc. This case is valuable in illustrating how chronic a condition can be completely overcome by specific treatment.

### **Case 26. Gastric Ulcer and Cancer. Mrs. K., age 39.**

Family History, negative to cancer.

Past History: Scarlet fever at 13 years of age and diphtheria at 36 years of age.

Pregrowth symptoms and status of patient: Trouble started ten years previously, with indigestion and vague abdominal pains, prolonged blind spells and dizziness for seven years of this period. Uterus and fibroid tumors were removed and two years later an ovary and the appendix were removed at the Battle Creek Sanitarium. The stomach trouble kept getting worse, so was treated for gastric ulcer. March 1922, the gall bladder was removed at Battle Creek Sanitarium, the surgeon found a growth obstructing the pylorus. The patient reports that a gastro enterostomy was performed. No relief was obtained but the patient grew rapidly worse, terrific pain in abdomen and back, continual vomiting of undigested food and blood.

Admitted November 13, 1922. Examination revealed a large growth filling epigastrium to the umbilicus and extending below umbilicus on right side. Treatment administered and recovery rapidly followed, all the mass having disappeared by January 1923. Perfect gastric function was not established, however, until several months later. She is in good health today, able to do six washings a week with ease. Has perfect stomach function.

Discussion: This case also illustrates that, the gastric ulcer represents the pregrowth symptoms but not necessarily to the exclusion of the usual nervous symptoms.

## **MIGRAINE AND CANCER**

Migraine, like neuritis, is a direct result of activity of the cancer causing toxin. Headache may be the chief pregrowth symptom.

### **Case 27. Headache, Goitre and Cancer.**

Mrs. B., age 49, weight 169, referred by Dr. Schultz, September 12, 1924.

Family History, negative to cancer.

Past History: Well all life except for the pregrowth symptoms. Pregrowth symptoms: severe headaches for the last twenty year, every week put her to bed a day or two, but practically no headache since growth reaching the size of a walnut by June 1924, came in left breast. The thyroid was enlarged twice its size, for last few years, the skin was thickened, with



pigment patches over the sides of the neck and cheeks myxoedema.

Status of patient: Examination September 12, 1924 nearly whole left breast one mass of cancer 9 cm in diameter, fixed to skin and parieties, had reached that size from that of a walnut in four months, carcinoma simplex type, nipple somewhat retracted. The axillary glands on the right side were slightly enlarged on left side there were several glands the size of a peanut. She had been losing "pep" for the last year; gained weight by 15 pounds in the last year, but lost 4 pounds in the last month. She was treated with complete recovery and disappearance of growth, taking place in 6 months. Likewise all pregrowth symptoms have left. She reports that she feels better than for twenty years.

Discussion: In this case the pregrowth toxic symptoms were a migraine that persisted until the growth came, and there were myxoedema changes referable to thyroid suppression.

### **Case 28. Headache and Cancer.**

Miss G., age 52, referred by Dr. Chandler of Flint, Michigan.

Family History, negative to cancer.

Past History: Had the usual childhood diseases, otherwise well.

Pregrowth symptoms: Severe bi monthly headaches over a period of years before the growth came.

Status of patient: In November 1917, she had a severe hemorrhage from the uterus, thereafter her health failed and she lost in weight from 135 to about 70 pounds by December 1919. In May 1919, her trouble became very serious and examination by Dr. G. F. Johnston of Traverse City revealed an extensive cancer of the uterus. Hemorrhages became regular and the drainage from the uterus became profuse, and she grew thin and weak. She was brought to me by Dr. Chandler of Flint, Mich. In December 1919. At that time examination found her nearly bloodless, cyanotic, with rapid thready pulse; dyspnoea, and with not sufficient strength to raise her head from the pillow. The whole region below the umbilicus was one lumpy mass of cancer continuous with the uterus. Vagina nearly full of the uterus growth, which was necrotic and still, bleeding. Treatment was given and a gradual recovery took place over a period of 18 months before cure was established; with body weight returned to normal and the patient returned to work: Headaches let up in the first six months. She is in perfect health.

Discussion: This case illustrates the pregrowth symptoms taking the form of periodic bi monthly headaches against which the cancer effort had no successful protective influences, and which was overcome by the removal of the toxin that caused the cancer to come, even before all traces of the cancer growth had disappeared.

### **Case 29. General Sclerosis and Cancer.**

Mr. A., age 72.

Family History negative to cancer.

Past History: Well all his life. Pregrowth symptoms of dizziness and spells of poor vision (which he attributed to exposure to the sun), for the past years. A condition of general arteriosclerosis, with prostatic enlargement, and arcus senilis, plus moderate opacity of the lenses coming on for the last few years.

Status of patient: The growth started as a pimple on the back of the left hand about November 1, 1921. It rapidly grew worse, acting like a boil. By March 29, 1922, it had reached the size of a silver dollar, and also spread to the outside of the hand and on to the two outer fingers. At this time he entered the University of Michigan Hospital for examination and diagnosis. They removed a specimen, took a radiograph of the bones of the hand to determine if they were severely involved, and sent him home with the statement that they would send a report to Dr. B. G. McGarry, his family doctor, who would make suggestions regarding treatment. This was done, and the University reports were turned over to the patient, with Dr. McGarry's recommendation that an amputation be performed.

On April 10, 1922, patient was admitted and our examination revealed a typical carcinoma as described above, with central depression and raised edges. Axillary glands were slightly enlarged: Senility changes were present as mentioned above. Treatment was given, and recovery was complete, with perfect healing reestablishing the sweat glands and hair, without any noticeable deficiency remaining, in sixteen weeks. Moreover the arteriosclerosis, arcus senilis, and lens opacities and enlarged prostate, have likewise disappeared. He has gained from 170 to 193 pounds and claims to feel twenty years younger. The attention of the Medical School at the University of Michigan was called to this case, but they showed no enthusiasm over the matter. The patient was also demonstrated to the cancer committee of the Wayne County Medical Society in November 1923, among other cases cured by the treatment.

Discussion: This case illustrates, like cases 18, 19 and 30, that the toxin bringing on the senility changes was identical with that causative to the growth, for both the cancer and the senility changes were removed by the same treatment. The reconstruction of the skin as an organ, with recovery of sweat glands and hair is a noteworthy accomplishment and demonstrates that this treatment is fundamentally a constructive one, and different from the destructive methods in vogue at present.

The sclerosis is perhaps a protective response against the toxin in the sense of a barrier to the passage of the toxin through the tissues, but more likely may be viewed as a direct action of the toxin on a certain chemical grouping in the tissues. This point will be discussed in another paper.

#### MOST INTERESTING RESULT

#### **Case 30. Goitre, Gastric Ulcer, Headache, Senility and Cancer.**

Mrs. G., age 67.

Family History, negative to cancer. Father died of apoplexy at 70 years of age.

Past History: Well all life, except for disease of childhood and sciatic rheumatism since 60 years of age.

Pregrowth symptoms and status of patient: Subject to frequent headaches; goitre for over 10 years, stomach trouble for last 16 years, took soda right along, pain relieved by eating until the summer of 1922, when pain became continuous and was aggravated by eating, vomited frequently, had to take opiate for pain, became cachectic, and confined to bed. On both September 2, and 12, 1922, had severe hemorrhages from the stomach. Dr. Potter examined patient and decided she was too far gone to be taken to a hospital for attempt at relief, believing that she would die on the way, so the family reports:

My examination was made on September 18, 1922, I found the patient to be a very cachectic emaciated old woman, skin dry, wrinkled and bloodless, fingers cyanotic, hemoglobin less than 10 per cent, respirations 38, pulse barely perceptible, bowels had moved only tarry matter during the past week, still vomiting blood with the little food that was taken. Abdomen tender, mass occupying whole abdomen above umbilicus, fixed to liver. To the left and extending below umbilicus, an orange size mass somewhat movable, marked arteriosclerosis, arcus senilis, lenses somewhat opaque well developed goitre.

Treatment was given, recovery complete, with return of function, disappearance of all masses including the goitre, disappearance of arcus senilis and opacities in lenses and return of elasticity of blood vessels. She is still perfectly well, and well nourished and active, feels better than for many years she reports.

Discussion: This case demonstrates the disappearance of four pregrowth conditions: headache, goitre, gastric ulcer, senility, as well as the cancer, the cure of each attending the removal of one toxin at the base of the trouble.

Certain other pregrowth syndromes will be discussed in a following paper.

## PART IV

The previous papers published in this Journal (May, July, and August, 1925) demonstrated that the toxin causative to cancer produced certain definite changes in the body, often for years before the growth came, and that the growth came as a protective response, which however was not adequate. The growth symptoms described were a certain type of dizziness, migraine, gastric ulcer, toxic goitre, simple goitre, and sclerotic senility changes. It was also demonstrated by case histories that the removal of the cancer causing toxin resulted not only in the cure of the cancer, but also in the removal of the pregrowth symptoms and changes.

The present paper briefly discusses certain other pregrowth syndromes, identifying their etiology with that of cancer, demonstrating the cure of these conditions by the removal of the cancer causing toxin. These pregrowth symptoms are, rodent ulcer; uterine ulcer (hypertrophic endometritis) pseudo-hypertrophic muscular paralysis, neuritis, and pigmentation.

The following case histories illustrate:

### **Case 31:-Pigmentation and Cancer.**

Mr. M., age 44, referred by Dr. E. Richey.

Family History, negative to cancer.

Past History: Fairly well all his life, had childhood diseases.

Pregrowth symptoms: Pigmentation in patches and areas free from pigment distributed over the body, coming on in last few years.

Status of patient: For several years prior to 1921, bleed at stool and experienced a mass of tissue protruding that could be pushed back into the rectum. Specimen was removed by Dr. R. Andries, and examined by Dr. A. Warthin, pathologist at the University of Michigan. Another specimen was also removed and examined by Dr. James Davis, pathologist for several hospitals and the Detroit College of Medicine.

A diagnosis of rapidly growing adeno-carcinoma was made by both pathologists. Operation, April 1921, at Providence Hospital, Detroit, by Dr. Andries, cautery and radium also applied. In March, 1922, another cautery and radium needles again used. X ray treatments once a week for a period. Continued to grow worse, so much so, that he could not sit down. Dr. Andries had the patient examined by Dr. Angus. McLean, who said the condition was hopeless, but to continue with the radium. May 1922, radium again applied for twenty four hours and three more X ray treatments given, but patient grew worse rapidly, and the physicians advised the family that he was getting worse and hopeless. The bladder started to give trouble after the last radium treatment and continually grew worse, bleeding from rectum became severe in August and September 1922, and a rectovesicular fistula developed, so that stools came through the penis. Greater and greater pain, loss of weight and strength, obstruction of the bowel progressed. In October, 1922, the patient called his old family doctor who found the rectum completely involved, and the disease had spread to the liver and' throughout the abdomen generally. Dr. W. Evans, the radiologist at Harper Hospital, was consulted. He also looked upon the condition as hopeless.

Thus the disease had progressed from a small lump that caused but little inconvenience outside of the bleeding to a generalized carcinomatosis with recto vesicular fistula and marked cachexia, and this in spite of all the surgery, cautery, X ray and radium that could be given.

Admitted for examination, and treatment on November 5, 1922. I found the rectum full of the growth. It was impossible to introduce the finger beyond internal sphincter. The abdomen was involved throughout, the liver mass reaching to .umbilicus. Weight 114 pounds, some oedema of tissues. Irregular patches of pigment were distributed over the body, and there were unpigmented areas not subject to darkening from sunburn. Feces passing through penis and the urine with stool through rectum.

The report of the patients condition is stated as follows by his surgeon, Dr. E. Richey: "The malignancy at this time had spread to the abdomen, involving practically all the liver, large and small bowel, more extensively on the right side, perforation between bladder and rectum, marked cachexia, loss of weight, anorexia and a continuous passage from the bowels of mucopurulent material."

Treatment was given and recovery was complete by September 1923, with gain in weight to 142 pounds, a complete disappearance of all cancer masses and a return to the best health he ever enjoyed. His first year back to work was sufficiently energetic to win for him the prize for being the most successful real estate salesman in his association. The pigment patches have not completely disappeared as yet, although they greatly diminished.

Discussion of case: This case demonstrates the healing of a recto vesicular fistula caused partly by radium and partly by cancer, and the recovery from a generalized carcinomatosis, in spite of previous mistreatment: The most interesting feature is the slow absorption of the pigment going on for over a year without having as yet become absolutely complete after all traces of cancer have disappeared. Thus we may conclude that the pigment deposits are secondary to changes resulting from the cancer producing toxin.

### **Case 32. Neuritis, Pigmentation and Cancer.**

Family History: Mother died of cancer of stomach, age 72.

Past History, Typhoid fever at 10 years of age.

Pregrowth symptoms: Severe headaches two or three times per month for twelve years before growth came in right breast, and becoming much worse after growth came, also a severe sciatic neuritis worse for six months before taking our treatment.

Status of patient: Weight 145 pounds, pigment patches over cheek bones, temples and sides of neck, several areas on the arms. A mass in the right breast size of an egg, attached to skin and parieties; palpable axillary glands (largest the size of a hickory nut) and small supraclavicular glands. She complained of severe pain in shoulder, down right arm, and in breast. Had a slight dry cough. Diagnosis: moderately advanced carcinoma of breast, with widespread metastases. Treatment was given in February 1921, sciatic neuritis and headaches soon ceased, and all traces of cancer have since disappeared. She gained in weight to 165 pounds and remains in perfect health. Patient remained at work, teaching school throughout recovery. The pigmentation has also disappeared, but it did not do so until after all cancer tissue was absorbed, and disposed of.

Discussion: This case exemplifies a fairly common pregrowth symptom-neuritis-which is severe and generally attacks the sciatic nerve. It is a toxic effect like the pregrowth headache, and lets up very soon after treatment. Thus the rapidity of the conversion of toxin to anti toxin is illustrated. I am citing three cases of similar neuritis in patients in whom no cancer could be detected, but where rapid recovery was had from the treatment.

**Case 33. Neuritis.**

Dr. M., age 62, suffered with gradually increasing neuritis in both legs for two months, finally had to take to his bed and resort to morphine, the condition rapidly becoming worse. Examination could reveal only an enlarged prostate. Area of anesthesia over outer side of right leg and over toes, small area over left ankle. Paralysis of leg muscles. Skin dry like flour. Loss of function of genitalia.

Treatment given November 1922, recovery from neuritis and back to his practice in four days. It has never recurred. The skin became normal within twelve weeks, but the anesthesia, and the paralysis were not overcome until after a year had passed. Prostate normal.

**Case 34. Neuritis.**

Mr. E., age 36.

Family History, negative to cancer.

Past History: Well all his life, except for transient blind spells and difficulty in relaxing sphincter iris for the three years past. Pains in left hip and down sciatic nerve for 6 months.

Status of patient well nourished apparently healthy man. No pathology could be demonstrated by physical examination or by X ray study. Complained of severe sciatic pains that did not let up nor respond to former treatments, aggravated after five p.m., unable to stand on left foot. Examination could locate no pelvic growth. Sphincter Ani very spastic.

Treatment given May 12, 1925, recovery complete in 14 days, able to balance on left foot without pain or difficulty.

**Case 35:-Neuritis.**

Mr. F., age 88.

Family History, doubtful as to cancer.

Past History: Well all life except for last two years a gradually increasing neuritis of the right sciatic nerve and lumbar region. For the past several months not able to work more than a few, hours a day, unable to climb under automobile: All sorts of treatments were applied and failed.

Examination June 12, 1922, revealed no gross pathology and X ray studies also failed to show any abnormality. Treatment was given and relief was complete in four weeks. He has had no recurrence.



The toxin causing the neuritis in this case must have been identical with that causative to cancer, or it would not have been removed by the cancer treatment. The pregrowth diagnosis and relief of the cancer disease is therefore possible.

### **Case 36. Hypertrophic Pseudomuscular Paralysis.**

Mr. W. J., age 22.

Family History, negative to cancer.

Past History: well all his life except for falling spells, which starting at 9 years of age, would go down in a heap, was insured in the back from playing football but recovered rapidly.

"Pregrowth symptoms" of fainting had existed for years until five years ago, had dizzy and blind spells from ages of ten to fifteen. Falling spells since 9 years of age.

Status of patient: At the age of twelve muscles started to hypertrophy very noticeable, the condition increasing and persisting over a period of eight years. Two years ago the muscles started to reduce.

On examination August 6, 1924, the muscles were found generally atrophic, especially the muscles of the thighs, the knees were easily thrown out of joint. There was marked foot drop, knee jerk absent. Peculiar wobbling gait, knees flexed backward. Falls came from sudden loss of muscle control. Fell every little while, many times a day in spite of support of cane. Patient also feels himself fall while lying awake in bed, has a sense of a general let go of all the muscles progressively getting worse. No treatments (everything was tried) has really helped.

Treatment given and recovery nearly complete in eleven months, ability to walk nearly good as anyone, nearly complete restoration of the muscles, which are still developing, falls only occasionally but can control the falls now. There is complete absence of the "pregrowth symptoms" of dizziness and blind spells. The knee jerks are diminished but there is no foot drop.

Discussion: This case was treated ii months ago and, has recovered sufficiently during that time to show that the course of recovery resembles that in cancer. The first symptoms to come were last to disappear after treatment and the patient is now in the best of condition symptomatically resembling the onset of the disease. This case could not be mistaken for cancer. Yet it ran a similar course with pregrowth symptoms of falling spells, fainting, dizziness, and blind spells, before the neuromuscular pathology set in. The falling spells which like those observed as pregrowth symptoms to cancer, are a sudden cessation of muscle control, and possibly a cerebellar disturbance due to the presence of the toxin. The nerve paralysis and resulting muscle atrophy are the results of the chronic effects of the toxin. The regeneration of nerve and muscle function followed the detoxication by such time as is necessary for regenerating these structures.

The fact that the toxin at the base of the trouble is converted into anti toxin by the cancer

treatment identifies it with the cancer producing toxin, and the whole syndrome can then be classified with the cancer pregrowth symptoms.

### **Case 37. Rodent Ulcer.**

Mr. M., age 46.

Past History: Well all his life until present illness.

Pregrowth symptoms were not elicited.

Status of patient Growth started on right side of nose 4 years ago. Had it frozen with carbon dioxide snow without help.

Examination January 18, 1924, revealed a typical rodent ulcer about the size of a dime, involving the wing and sulcus on the right side of the nose. Otherwise the patient was well. Treatment was given and recovery, with complete healing in five weeks. He is still in perfect health.

### **Case 38. Rodent Ulcer and Cancer.**

Mr. E., age 77.

Family History: One sister died of cancer of breast.

Past History: Well all his life.

Pregrowth symptoms: Very slight dizziness for years, only on stooping.

Status of patient: Sore came on lip 8 years ago, operated at Victoria Hospital, London, Ontario, diagnosis given was cancer. Sore returned six years later, had it cauterized but it only got worse. Had it treated with pastes, but it still grew worse. Admitted here for treatment in November 1923.

Examination revealed a well developed rodent ulcer, destroying lower left half of lip and some of the cheek and a typical squamous cell carcinoma of the angle of the mouth involving the upper lip. Treatment was given. The rodent ulcer healed in less than 2 weeks, but the carcinomatous area was not completely cured until 5 weeks later. He is still in perfect health.

Discussion: Other cases might be cited where the rodent ulcer was cured by a paste, years before the cancer developed in an internal organ. These cases all demonstrate, particularly since the rodent ulcer disappears rapidly like gastric ulcer, pregrowth neuritis, and other pregrowth symptoms after this treatment, that they are all manifestations of the action of the cancer causing toxin.

### **Case 39. Hypertrophic Endometritis and Cancer.**

Miss E., age 29.

Family History: Father had cancer of stomach, cured by Koch's treatment. Sister had cancer of uterus developing on an ulcer of the uterus similar to this patient's and was cured by Koch's treatment.

Past History: Pneumonia at age of four, and the childhood diseases.

Pregrowth symptoms: Uterine ulcer for 14 years.

Status of patient: Started to menstruate at 13, was regular for two years, then started to hemorrhage following the regular period, each successive period becoming longer, until she was bleeding continuously, with only short intermissions. Bleeding was rather violent at times, worst period from ages of 16 to 18. When 19 years old, she was operated on by Dr. R. Peterson at Ann Arbor, well for a few months when she again started bleeding that persisted steadily for a year (1916). Operated on by Dr. Lucy Haskins in December 1916, well a few months then settled down to steady flow for rest of 1917. Operated January 1918, and September 1918, better for a while and had natural periods during the entire year of 1919. In August 1920, she started to flow irregularly and in spring of 1921 had a bad hemorrhage; Dr. Curds recommended radium, but she did not take it. Stopped flowing for four months. During college year of 1921 1922, she flowed steadily. Dr. Hoover of Cleveland, said he could do nothing, sent her to Dr. Weir at Lakeside Hospital who curetted and took specimens. Well for two month's, the flowing began again, took osteopathy for a while, got much better except for the constant flowing. Went to Dr. Hiram Ross, of Daneville, Illinois, who found a large growth and used radium January 1923. One month later she had the worst hemorrhage ever, and thereafter grew progressively worse.

Examination July 8, 1923, found uterus fixed, enlarged to the size of an orange, with a larger mass extending into the broad ligament on the left side, and up into the abdomen. Cervix hard nodular and ulcerated three times normal size and emitting a bloody drainage. Treatment was given, and bleeding stopped for five months. A small flow started again in December 1923, which gradually diminished until normal menstruations occurred. Examination March 6, 1925, found her normal. All masses have disappeared and the uterus returned to normal.

### **Miss E., sister of Case 39, age 23.**

Status of patient: Started to menstruate at 13 years of age. Not long after, she started to bleed six weeks at a time, continuously for about one year. Operated with removal of cervix and a papilloma and was curetted, she reports. Well for ten years. Bleeding started again in September 1923, and continued to date, lost weight from 136 to 112 pounds in last three months. Went to Henry Ford Hospital November 8, 1923, where they advised the use of radium, and let the patient understand, she reports, that the condition was cancer. My examination November 13, 1923, revealed a typical carcinoma of the cervix, squamous cell type, 1 3/4 inches wide, cauliflower mass, broad ligaments involved, uterus fixed and

extending into the abdomen halfway to the umbilicus, typical bloody odorous discharge.

Treatment was given and recovery, with return to normal of all tissues concerned, was completed in sixteen weeks. She remains well to date, .and menstruates normally.

Discussion: The father of these patients was cured by this treatment of cancer of the stomach and the two daughters became victims of the same infection, early in life, both expressing their reaction to the toxin in the same way.

The first case used radium and a persistent irritant thus was introduced to complicate the pathology. The second case was a clean cut one. Both started out as ulcers of the endometrium and both ended .up as cancer. Both were cured by this cancer treatment. These cases run parallel to gastric ulcer in that the ulcer antedates the cancer and, as is often the case, becomes the site for the development of the cancer. Thus rodent ulcer, gastric ulcer and endometritis, especially if its cause cannot be explained, should be recognized as a sign of the presence of the cancer causing toxin and the forerunner of cancer.

## **SOME GROWTH MANIFESTATIONS OF CANCER NOT CLEAR CUT OR DEFINITELY CLASSIFIED**

### **Case 40. Cancer of Uterus.**

The microscopic recognition of cancer and its differentiation from other protective responses of the same order,

is not always possible, indeed very often not possible. The clinical course of the disease with the wide range, of data yielded, has always been the best guide to correct diagnosis. Yet the medical profession has let itself be led through misinformation, plain ignorance, and lack of interest, to submit to the claims of the microscopist, the new Sherlock, who alone with his little lenses would decide as to whether or not a disease is cancer. It may be that the pathologist with his peculiar training does not know his limitations. The important fact is that through the pathological attitude rampant today toward disease we have lost track of the most essential clinical features bearing on malignancy. Moreover we have not learned to make a sure diagnosis of cancer with the microscope. Thus a syphilitic lesion is diagnosed sarcoma and a carcinoma too often called an adenoma. Many surgeons of experience will support this statement.

A more important insufficiency in the pathology service is due, to lack of study of the microscopic findings in the light of the clinical course of the disease. As a result definite malignant conditions are not classified at all, or only incorrectly. To illustrate I shall give two cases that were cured by this treatment.

### **Case 41. Sarcoma of finger.**

Miss H., age 19.

Family History, negative to cancer.

Past History: Measles, whooping cough in childhood, diphtheria at 16, operated upon by Dr. Hicks of Bradford, Ontario, for falling of the uterus at 18 years of age.

Pregrowth symptoms: Dizziness started 6 years before the growth came and became worse after growth came.

Status of patient: First finger of right hand became rapidly and painfully swollen one night in the fall of 1920, condition grew worse as finger swelled to twice its size, becoming red and hard. On the outerside of the second phalanx of this finger, a hard white "kernel," with central puncture gave the impression that the finger had been pierced by a sliver. Pus formed at this place, the finger was opened by Dr. Nash of St. George, Ontario, but only a little pus was obtained. The condition grew worse, with no relief from the pain. Finger opened again, but drained only a watery fluid. The bone was then scraped 14 different times, and a specimen removed and sent to the University of Toronto pathologist.

The whole finger was then removed about January 20, 1921. One month after the stump healed, the next finger started the same affair. It was lanced, the bone scraped, got worse rapidly, and was amputated. The finger was sent to the University of Toronto pathologist and the following diagnosis returned: Sarcoma, Tuberculosis or Syphilis.

One month later the third finger did the same thing. It was cut, scraped, and the surgeon, Dr. Reed, wanted to remove the hand first and later the arm, patient reports. Operation refused and patient came to Detroit to be treated.

Our examination was made August 10, 1921. The patient was a very nervous, highly toxic girl. The amputation stumps on right hand were swollen hard and red and blue, the whole hand and forearm were much swollen and the large axillary glands palpable. The ribs on same side lumpy, very tender, and painful. The third finger was swollen, barrel shaped, hard and deep red, about four times the natural size. A white spot, with central puncture, through which a watery fluid escaped, was noted in the position as described on the first finger, the little finger appeared normal.

Treatment was given and recovery ensued during the next few months. A few weeks after treatment, the little finger broke out in the same way, but the trouble was very mild and transient, not lasting over a week and causing no inconvenience. Both fingers rapidly became well and the swelling left the hand and arm. Likewise the axillary metastases disappeared, the ribs healed and disappearance of the nervousness and pregrowth symptoms of dizziness was completed before the fingers were healed. She gained weight and the best of health; has since married and has a healthy baby. She is in perfect health still. She returned to the surgeon to show herself, that he might enjoy her good fortune, but reports that she was not well received.

Discussion: This peculiar case might be explained in the following way. Embryonic rests remained in similar positions in the four fingers of the right hand. The infecting agent producing its poison was in her system for some six years, and causing the pregrowth

symptoms of dizziness and nervousness. The embryonic rests not being under inertia of physiological activity, were the easiest tissues to respond to the poisoning in the protective direction. As fast as one growth was removed, another came from a remaining rest, and finally, when the treatment was given and the growth underwent absorption unloading its stored toxin, the last rest was over stimulated and responded like the others. In the meantime the toxin was undergoing conversion to antitoxin and the resultant withdrawal of all toxin resulted in cure and the establishment of immunity.

It makes little difference what the microscopic report happened to be, the clinical course of the disease was that of malignancy, and the little cells that made up the tumors had a function they could not adequately perform, the function of protection, attempted anti toxin production. The disease was cured by doing the work for the growths.

#### **Case 42. Malignancy of Testes.**

Mr. F., age 28.

Family History, doubtful to cancer or tuberculosis:

Past History: Well all his life until present illness.

Pregrowth symptoms: Right-sided headaches very severe and persistent for three years. Right arm shoulder neuritis tree years.

Status of patient: Left testicle always twice as large as the right one. Two weeks before removal it grew painful and bigger and fluid collected in the sack. Operated, with removal of left testis August 10, 1921, by Dr. J. D. Mathews of Detroit. Specimen report: "marked evidence of tuberculosis." Two and one half years later the right testis started to swell, behaving as the left one had. Operation was again suggested, but the patient refused, to come to us for treatment.

Examination February 12, 1924, revealed the sack fairly distended with fluid, and containing an irregular mass the size of a lemon, with hard nodular epididimas, teste grown fast to scrotum and discharging bloody pus. Inguinal glands enlarged and a mass in the abdomen, size of an apple (mesenteric gland metastasis), also a hickory nut sized mass in right epitrochlear glands, and a mass in the left ribs close to the spine, size of a walnut, attached to skin and invading surrounding tissues.

Right nostril bleeding for the last few weeks, discharging pus at times. No cough. Morning headaches, afternoon fatigue. Although the microscopic diagnosis was tuberculosis, the clinical course was that of malignancy, so the treatment was given. Recovery was completed in 5 months, return to normal of teste and scrotum, disappearance of all growths; and patient back to work, in perfect health, and free from pregrowth Symptoms.

Discussion: The course of recovery was that which takes place in malignancy, after our treatment; and the diagnosis of malignancy is thereby confirmed. It is evident from the pathological report in question, which was made by a recognized pathologist, that the



tissue gave the impression of tuberculosis and as the bacillus is so rarely met in such tissues, it was not included as a diagnostic feature. Therefore, judging from the cytology of the testicle removed, the pathological diagnosis could not be made, and the report was only a guess. The tissue showed only one pathognomonic feature and that is typical cellular hyperplasia. The clinical course of the disease proved, that this cellular hyperplasia was an inadequate one, and therefore malignancy was at the bottom of the whole trouble, for after all, malignancy, whether carcinoma or sarcoma, is a new protective response of cells against the definite toxin in the blood. The response is not adequate and therefore persists by increased growth and metastasis, in the attempt to become adequate. The removal of the toxin, with consequent atrophy and absorption of the neoplastic tissue, is proof complete as to the diagnosis of malignancy. Therefore, though the pathologist cannot make the diagnosis, the clinician can do so. Now he can also cure the disease and substantiate the diagnosis of malignancy. Therefore, though the follows a definite program, and its features explain the true nature of malignancy.

### **THE COURSE OF RECOVERY**

The recovery from an infectious disease is a matter of immunity and in cancer it also involves processes of removal of the growth tissue and the healing of destroyed areas in such a way, that function can be resumed.

Most of the principles concerned are exemplified in the case histories presented in this series of papers, but the reaction features have not been detailed in the various cases, in order to save space. These features are fairly constant, and one case history will suffice to illustrate. (Patient just reported for examination and reaction features were clear in his mind.)

#### **Case 43. Gastric Ulcer and Cancer.**

Mr. H., age 51, referred by Dr. Norman Wilson, of Jackson, Michigan, and Dr. Stitts, of Stockbridge, Michigan.

Family History, negative to cancer.

Past History: Mumps three years ago, and Flu in 1224.

Pregrowth symptoms: Dizzy spells for last 14 years; on retiring, would feel as if taking somersaults. Also transient blind spells, feeling as if whole musculature was giving way, had to sit down so as to avoid falling. These spells did not let up until the sixth week after the treatment was given. Gastric ulcer (adequately diagnosed) twenty years ago, from which he was practically well until 7 years ago. Three years ago develop a general anasarca. This subsided for the most part, but remained easily noticeable until the sixth week after treatment, when it disappeared.

Status of patient: Had been vomiting regularly, and had slimy dysentery since fall of 1924, had frequent diarrhea for years past. Burning pain across the upper abdomen; constant since fall of 1924. Lost from 178 to 155 since January 1926, vomiting of decomposed blood

and had tarry stools since January 1925. Cough, difficulty in swallowing, a sense of pressure in the throat, rapidly getting worse in last month. Unable to retain even water in stomach, last several days pressure in chest suggesting heart impairment to patient. Wasserman negative, Michigan State Board of Health. The examination made April 23, 1925. Color of skin and eyes yellow plus a cyanotic flush, general slight oedema, worse in ankles. Left supraclavicular mass size of large walnut, increased mediastinal dullness, and heart apex beat shifted to left. A mass in abdomen reaching from ribs to two inches below umbilicus on right side, tender and hard, anterior shelf of sigmoid involved by mass, size of small egg. X ray report from Dr. R. M. Cooley of Jackson, Michigan, to Dr. Wilson: "Chest negative, lesser curvature of stomach presents a smooth appearance, but there is ragged shallow filling defect on the greater curvature, that extends from the prepyloric region upward to the cardiac region. This filling defect is constant in all films. The cap is not seen on any of the films. Slight ilial residue at five, hours, and normal colon." Visceral reflexes to muscles of back, causing spasm of erector spinae muscles from 5th to 10th dorsal vertebra, reported by Dr. Wilson and easily found by me.

Treatment was given April 23, 1925, and recovery followed the course given below.

Temperature For nearly twelve weeks after treatment, he ached all over, more or less. Chills and fever set in on the fourth day, lasting a few hours, returning the ninth and twenty-third days, also had a fair fever during the ninth and at the end of the eleventh week. Hoarseness, cough, and difficulty in swallowing disappeared by end of fourth week, color much better, cyanosis and oedema completely absent. Mucous and diarrhea stopped by the end of the sixth week, and masses were barely palpable.

Pregrowth symptoms completely disappeared by end of seventh week. Some bleeding from rectum, with chills and fever of ninth week reaction, after which hyperaesthesia over abdomen left, and stools large and formed were passed the first time in several years, regular natural bowel movements ever since. All masses completely disappeared, and visceral reflexes produce no longer spasm of spinal muscles. End of eleventh week, all aching and reaction symptoms have disappeared and patient feels better than for the last twenty years, he claims. Examination by Dr. Wilson and Dr. Stitt, can find no trace of the disease. Neither can I. Gain in weight was at the rate of one and one quarter pounds per week throughout. Present weight 170 pounds, and still on the gain, strength nearly returned. No X ray pictures will be taken for some six months, because of the anti healing influence they possess, and we want the patient all healed before he is submitted to any injury. For even though he may be all healed at present, his tissues are still tender.

The prognosis in this case as given by his doctors when referring him was, that he might live only five weeks. To all intents, this patient is now cured, and convalescence nearly complete. He should be in better health each year, as occurred in other cases cited.

Discussion: Immunity is established at the end of the seventh week, and the process of removal of the growth progresses most thereafter, although sometimes it starts earlier. Generally the twelfth week winds up the reaction period.

The process of removal of the growth tissue is a matter of cell autolysis, plus the ingrowth

of angioblastic tissue by which the digested material can be carried away. The growth thereby becomes replaced by blood vessels, and these retract as soon as their work is done. They provide for the restoration of destroyed tissues.

The fevers that occur are due to the burning up of products of mal-metabolism, and materials absorbed from the growth that cannot be used for rebuilding the tissues of the body. They include also various samples of the stored (absorbed) converted cancer causing toxin, and products of activity of various bacteria that might be present in the growth. The fevers represent immunity accomplishments.

## **RETURN OF FUNCTION**

The recovery process has completed itself only when full return of function .has been established and I am citing as an example this case of cancer of the uterus, that after recovery became pregnant and at the end of the normal term, delivered a normal baby and remains in the best of health.

### **Case 44. Normal Pregnancy Follows Cure.**

Mrs. T., age 31.

Family History, negative to cancer.

Past History: Well all her life, except for appendectomy op June 16, 1921, performed by Dr. Royce.

Pregrowth symptoms of dizziness that were slightly better since the growth came. Headaches regularly for years.

Status of patient: Irregular bleeding from uterus for over a year, pains in back and down legs, characteristic discharge. Specimen was removed by Dr. L. N. Tupper of Redford, Michigan, August 1, 1923, and sent to the Owen Clinic Laboratory, which is the reliable and recognized diagnostic laboratory of Detroit. The specimen was found to be squamous cell carcinoma, and the surgeon recommended operation. From the time of removal of the specimen to time of treatment, August 7, 1923, the bleeding was constant and profuse.

Examination August 7, 1923, found uterus enlarged by the growth and extending into the abdomen, one third the distance to umbilicus. Cervix enlarged to size of an apple by a nodular mass, extending into broad ligaments.

Diagnosis of cancer confirmed by these findings and history of pregrowth symptoms. Treatment given with complete recovery in five months with gain of fifteen pounds in weight, uterus returned to normal structure, and complete disappearance of pregrowth symptoms.

Became pregnant in the late summer of 1924 and gave birth to a normal baby at end of

normal term. No difficulty attended delivery. Uterus remains normal and patient in excellent health.

Discussion: Such a return of function as has been exemplified in our cases proves that the growth of cancer cells into adjacent tissues is an interstitial infiltration and that the true destruction of the normal tissues is not as great as would so often seem. But even where deficiencies are observed, there is a great tendency to repair the affected part, with restoration of the physiological elements in normal proportions, so that function can be resumed. Thus the removal of the cause of cancer, the toxin and the organism that produces it out of the tissues of the host, gives nature free sway to restore her normal self. Moreover, one thing has been gained through being cured of cancer, namely that the process of conversion of toxin to anti toxin, once established in the body, is a perpetual acquirement, the true immunity state.

“Dr. Koch’s interest in the study of medicine was to find a remedy, other than surgery to which his father afflicted with cancer of the stomach submitted without avail for the cure of a cancer. He has been a teacher both at the University of Michigan and in the Detroit Medical College. His point of approach of the study of the problem was one following his study of the parathyroid glands and their protective functions. After years of study, which at times required days without sleep to watch his chemical experiments he produced synthetically a protective substance, an antitoxin, for the cure of cancer. This was over seven years ago. The Editor has personally seen and examined many of the patients whose case histories have appeared in the Journal. and she found them all in good health.

## Dr. Koch Publications

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### 1912 – 1939

- 1912 W. F KOCH Ph. D., M. D. ON THE OCCURRENCE OF METHYL GUANIDINE IN THE URINE OF PARATHYROIDECTOMIZED ANIMALS.
- 1913 CHEMICAL CONSEQUENCES OF THE REMOVAL OF THE PARATHYROID GLANDS
- 1913 TOXIC BASES IN THE URINE OF PARATHYROIDECTOMIZED DOGS
- 1916 THE PHYSIOLOGY OF THE PARATHYROID GLANDS
- 1918 TETANY AND THE PARATHYROID GLANDS
- 1920 A NEW AND SUCCESSFUL DIAGNOSIS AND TREATMENT OF CANCER
- 1925 CANCER ITS FUNCTION AND CURE, THE EVOLUTION OF THE IMMUNITY PROCESS
- 1926 CANCER SUPPLEMENTARY POINTS
- 1926 THE PREVENTION OF CANCER
- 1927 BLOOD CHEMISTRY IN MALIGNANCY
- 1927 THE KOCH CANCER TREATMENT AND ITS INVESTIGATIONS
- 1938 NATURAL IMMUNITY VIA AEROBIC GLYCOLYSIS
- THE FUNCTION OF CANCER
- THE JOURNAL OF THE AMERICAN COLLEGE OF PROCTOLOGY

### 1940 – 1949

- 1939 Clinical Demonstration of the Laws of Chemical Structure that Determine Immunity to Disease, and their

#### Application in the Treatment of Patients

- 1940 THE BASIC CHEMISTRY OF OUR DIET
- 1941 A BRIEF HISTORY OF THE KOCH SYNTHETIC ANTITOXINS
- 1941 AN EFFICIENT SINGLE DOSE TREATMENT FOR DIABETES, On A Full Carbohydrate Diet Without Insulin
- 1941 CHEMISTRY'S VICTORY OVER DISEASE
- 1941 PRINCIPLES OF THE KOCH THERAPY INTRODUCED IN 1918
- 1941 RELATION OF FOCAL INFECTION TO CANCER AND ALLERGY IN CAUSATION AND RECOVERY

#### 1950 – 1957

- 1958 SURVIVAL FACTOR IN CANCER AND VIRAL INFECTION
- 1961 SURVIVAL FACTOR IN NEOPLASTIC AND VIRAL DISEASES
- 1963 NEOPLASTIC AND VIRAL PARASITISM THEIR BASIC CHEMISTRY AND ITS CLINICAL REVERSAL
- 1966 THE KOCH CONCEPT (FOR THE SCIENTIFICALLY KNOWLEDGEABLE)
- 1967 THE FUNCTIONAL CARBONYL GROUP IN PATHOGENESIS
- DR. KOCH'S EXPLANATION OF THE FUNCTION OF HIS REAGENTS