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CANCER AND THE EVOLUTION OF THE IMMUNITY PROCESS*

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A chemical compound is not simply a mass of material but must be recognized as so much concentrated energy, and its chemical behavior is a function of the energy playing upon it. Light, for instance, can mediate any type of reaction within and between chemical substances, and certain chemical bodies can emit light vibrations. But all chemical bodies emit characteristic vibrations depending upon the dynamic state of, or disposition of their electrons or valences. They may thus under proper conditions behave as photochemic ferments. Nitrogen containing cyclic compounds, offer the most important class of such substances with which we have to deal in physiology and pathology. Only a few of these bodies have been chemically identified and the study of their dynamics has been quite neglected.

Under the influence of vibrations received from other chemical bodies and by virtue of the entropy in the molecule three important classes of photochemic reactions can be induced in the molecule varying from a change in the state of isorrhopsis to actual ionization should the valences be in a sufficiently critical condition to permit.

Isorrhopsis can take place between adjacent molecules, (heterorrhopsis). The molecules thus flock forming larger masses of molecules, with increase in entropy. Such a system is not ionized, but is a nonconductor, a colloid, and acts as a photochemic ferment, because the vibration spheres of the heterorrhopsis constituents are wide and concentrated, and other molecules can circulate in their spheres, under which influence, adsorbed electrons are given a variety of impulses some of which are suited to accelerate the chemical reaction possible. Thus the rate and extent of the reaction are increased. Here a molecular system by virtue of its electronic impulses can induce and propagate a chemical reaction in other molecules without itself taking part in the reaction. It thus serves as a photochemic ferment.

Likewise molecules representing different phases of isorrhopsis in a substance can influence each

other by virtue of their abilities to vibrate sympathetically, so that a more energetic phase of the substance can induce the less energetic member to assume its valency disposition. In this way they behave as photochemic ferments.

The reactions possible for any chemical substance are determined by the characteristics of the medium, the influence of other chemical bodies. Thus the conversion of the cyanamides to urea in the anaerobic medium of the colon, does not take place, but the cyanamides in the colon take up ammonia radicles and become the guanidines, or they may polymerize with increase in entropy, becoming the melamines.

These are toxic substances of anaerobic germ origin and are continually absorbed by the blood and circulated throughout the body. So the situation requires a protective mechanism to permit a normal physiology.

In the presence of parathyroid function, these melamines and guanidines are again reverted to cyanamides and then to ureas and made harmless, and the body is thus protected. When the parathyroids are removed from the body, the guanidine toxins increase with production of tissue degenerations, convulsions and death.

So the parathyroid glands are a physiological immunity mechanism, perfected and established in the animal body. They protect against poisoning by a product of anaerobic germ activity in the colon, as we observed in 1912. This research has been later confirmed at Glasgow and other European universities.

With these chemical and physiological fundamentals as an introduction, I wish to outline the program of the pathogenesis of cancer in a practical way.

The toxin causative to cancer, originates primarily in the colon and is the product of anaerobic germ activity. The observations of Colonel H. Hallilay, the British surgeon, who spent some twenty years as Army Surgeon among the native Indians, prove that where frequent loose bowel

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movements are the daily habit, neither, cancer, gastric ulcer, appendicitis or gall bladder trouble is to be found. The dietary prevention of colonic stasis, as accomplished by Hay and Bulkley, also demonstrate that cancer and some other diseases have their primary origin in colon toxemia. Thus it is settled that the anaerobic germ chemistry of the colon, through stasis, can produce a general systemic poisoning, productive of cancer. Occluded tonsillar crypts are a certain but less frequent source of the poison.

All living cells have in common certain structural chemical groupings necessary to life. The virus associated with cancer, prepares for itself an essential structural unit, which has a counterpart in the animal cell. This virus toxin is prepared in an anaerobic medium, while the structural counterpart of the human cell is built up and functionates in an aerobic medium. Thus, two phases of the structural unit exist in nature, and as they represent homologous molecules, they are capable of sympathetic electronic vibration. Under proper conditions, the anaerobic or germ form, which is the one of smaller molecular weight, can influence the aerobic or human form to pulsate in unison with it, and to assume the molecular state represented in the germ form of the substance. An induction of sympathetic electronic vibrations, with resulting influence on chemical structure thus takes place. The toxin thus behaves as a photochemic ferment.

So the toxin of the cancer virus, when colonic stasis is present, is circulated through the blood and attacks every tissue of the body. Various symptoms arise which may precede the development of the growth for many years. These may range in severity from dizziness, temporary blind spells, headaches, neuritis, etc., to mental disturbances grave enough to be diagnosed insanity. We call these the pregrowth symptoms, since they let up in a high percentage of the cases, with the appearance of the growth. Impairment of functions of the glands of internal secretion, may also result in simple and toxic goitre, and adrenal insufficiency with pigmentation changes may follow. Moreover senility changes and tissue degenerations may precede and accompany the growth.

The growth first starts to develop where such circulatory changes take place, that favor an increase in the supply of the circulating toxin, and where a circulatory stasis follows, permitting the region to become more or less anaerobic. Injuries and scars, predispose to this anaerobic condition and here the cancer germ's toxin can carry on its inductive work to the best advantage. Moreover the germ itself can grow in an anaerobic medium to the best advantage and the region of circulatory starvation offers opportunity for its culture.

Here the toxin behaving as a photochemic ferment, converts more and more of the cell structural unit to the germ phase of structure, and the cells thus robbed, compensate the loss by preparation of more and more normal units. Each new unit prepared is converted to germ phase of structure and the development of the virus further favored. Thus

we have a supply of the material favoring germ reproduction, noticed recently by Gye and Barnard, and called a specific factor. The more the cells prepare of normally constructed units, the more germ form of the substance is made from them through toxin activity and the greater the development of the germ. Finally the cells show fatigue and may die off, forming a spreading ulcer, a rodent ulcer, or gastric or duodenal ulcer, or an endometritis. Or the cells may prepare abbreviated forms of the normal substance and reproduce to do this. By this reproduction a growth is formed and it has a function in that the abbreviated forms are more energetic bodies than the normal form and they tend to influence the toxin to assume their state of electron disposition. The growth thus demonstrates a function in that an antitoxin is approached, and by following this plan of attack, we have been able to prepare the true antitoxin synthetically. Unfortunately, this procedure of the tissue is not followed out far enough to offer adequate protection. However by thorough cleaning out of the colon continually, and by proper increase in the circulation in the growth, or its complete removal, if that can be done at this stage of the game, a more or less satisfactory cure is to be had. I have cured such a case, and so have others by proper diet and colon lavage and removal of the circulatory stasis in the growth. That such cures are but temporary, can be inferred from the fact that no anti-body production of note has been established in the body. And surgical removal of the growth at this time, tends to prevent the anti-body production entirely and is therefore the poorest of all methods of attack. The toxin is still in the blood and the anaerobic conditions in the operation wound, due to circulatory stasis, simply favor the development of a new set of cancer growths, even though the original growth were perhaps completely removed. Proper diet and colonic flushing, and increase in blood supply to the growth at this stage of its development offers a greater measure of benefit and permits the growth cells to tend to complete their program of immunity development.

After a time, the ability to form the abbreviated units becomes exhausted and the cells are supplied only with the germ type of the structure of the substance. They can incorporate these into their protoplasm and thus live an anaerobic existence. In so doing, they are devoid of physiological function, and grow or reproduce as fast as germ activity supplies them with new anaerobic units. They thus live in symbiosis with the germ, lose their histological polarity and grow and spread as parasites throughout the body, giving the usual clinical picture of cancer.

During the growth period, the body is generally detoxicated by the multiplying cells taking out the units from the blood, that they incorporate into their own structure. Hence the pregrowth symptoms of intoxication generally subside during the time of cancer growth. Should the cancer growth be removed largely, the pregrowth symptoms recur until the growth of cancer tissue catches up with

the toxin production. At this time also by energetic cleansing of the colon, and proper diet, the returning pregrowth symptoms can be to a large extent ameliorated, and recurrence of cancer tissue slowed up.

The preparation we use to cure the disease is a synthetic photochemic ferment of greater energy than the toxin, a very energetic sample of the normal phase of structure of the substance existing in the normal cell. It is energetic enough to induce isorrhopesis change in all of the toxin molecules, whether free or bound up in the protoplasm of the cancer cell or in the germ. It changes by its induction power all the germ phase of structure of the substance to the normal aerobic phase. Thereby the cancer cells are reverted to normal and the germ is killed, as it cannot exist with the substance in an aerobic phase.

The cancer cells are changed to normal, through the action of the treatment and then exist in excess of the physiological demand. They undergo calcification and digestion for removal, and the products are again used to renourish the depleted body. Aneamia and cachexia disappear and the pressure effects and other changes consequent to the growth disappear, as it is absorbed.

The removal of the involuting growth is accomplished by the ingrowth of angioblastic tissue which completely replaces the growth. These little vessels retract as fast as their work is done and they provide for the healing of destroyed areas. Thus recto-vaginal and recto-vesicular fistulae are healed with normal tissue elements and without scar production.

In the reconstruction of the tissues destroyed by the growth, the new cells that are formed, have an excess of preformed structural units of the order of the photochemic ferment, supplied by the treatment material. These units are built up into the cells of the new tissue being formed, and by virtue of their high photochemic value, these units provide a protective value to the new tissue, making it capable of changing any further molecules of the toxin to the state of structure normal to the human cell. Thus the new tissue, besides carrying on its usual function, acts as a new gland of internal secretion, and affords a continued protection against existence of the toxin responsible for cancer. This tissue can then functionate as an immunity organ like the parathyroid glands, and through the treatment we reach the goal toward which the cancer effort is struggling in its evolution—a perpetual immunity against a toxic product of a virus inhabiting the anaerobic recesses of the body, as occluded tonsillar crypts and an inert colon.

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*Following the reading of his paper, Dr. Koch presented five cured patients. The case histories of four of these have been published in the Journal in previous articles by Dr. Koch.

Case 1. Cancer of the uterus, a test case for the Wayne

County Medical Society, cured in 1919 (See Journal, May, 1925.)

Case 10. Cancer of the breast with Paget's disease, cured in 1919-20. (See Journal, July, 1925.)

Case 26. Gastric ulcer and cancer, cured in 1922. (See Journal, August, 1925.)

Case 44. Normal pregnancy follows cure of cancer of the uterus, cured in 1923. (See Journal, September, 1925.) Both mother and child were exhibited.

By motion of a member each of these patients was permitted to tell her own story. These stories will be published in the November or December issue of the Journal.

Dr. C. Everett Field head of the Radium Institute, and a fellow of the American Medical Association who has treated a large number of cases with the Koch "synthetic antitoxin" with marked success, led in the discussion which will be published in the next issues of the Journal.
Editor

THE "SIX MONTHS LAW"

The U. S. Children's Bureau recently investigated the effects of the so-called "six months law" of Maryland, which was enacted in 1916, forbidding the separation of mother and baby for the first six months of the infant's life. The report shows that just prior to the enactment of the law one of every three babies of unmarried mothers died in the first year, and one of every four in the first six months. After the law had been in effect about five years (1921), one out of every eight babies of unmarried mothers died during the first year and one of every twelve during the first six months, a reduction in infant mortality in this group of more than 50 percent. During the same period the death rate of infants of legitimate birth was reduced about 20 percent. The study shows also a decrease in the mortality of infants from intestinal diseases, which is considered due to an increase in breast feeding. Many small commercialized maternity hospitals have closed since the law became effective.

—The Medical Woman's Journal, June, 1925

There are three important reasons for adding diathermy to the treatment of gonorrhea with acriflavin.

1. The bactericidal action of anilin dyes is enhanced by heat.

2. Heat alone is germicidal to the gonococci. At 102° F. cultures no longer germinate, and at temperatures above 104° F. the cocci are killed. The temperature can be raised to 105° F., to 110° F., to 115°, to 120° F. and maintained at this point for 20 minutes without damage to the tissues.

3. Diathermy not only heats the tissues and thus kills the germs in the heated tissues but it produces a powerful leucocytosis, through the intermediary of the toxin of the gonococci and thus a clean mucosa is brought about through the ingestion of the gonococci and the other germs associated with them.

ELNORA C. FOLKMAR