2. During the latter half of pregnancy most primiparæ have a high normal or an increased platelet count, while multiparæ usually show no rise.

3. There are no special changes in the platelets during labor or the early days of the puerperium. At the end of the first week there is an increase which does not seem to be dependent upon lactation.

4. In eclampsia and pre-eclamptic toxemia the platelets may be high, low or normal, and they may be greatly increased during recovery.

5. After post-partum hemorrhages of considerable size, the platelets show a moderate rise, with a maximum occurring late in the puerperium.

6. The platelets may be low after prolonged labors terminated by operation. In case of short uncomplicated obstetrical operations done when the patient is in good condition, the platelets follow the same curve as in a normal labor and puerperium.

7. In uncomplicated abdominal and vaginal operations there is in some cases a transitory rise of the platelets following operation. Scopolamine-morphine, used during labor, causes no changes in the platelets.

8. The number of platelets at birth varies greatly, being sometimes high and sometimes low. After the end of the first week, however, these differences disappear and in early infancy the platelets are numerous (350,000 to 450,000).

9. The platelets show a marked increase in icterus neonatorum.

10. In hemorrhagic disease of the newborn there is no diminution of the platelets at the onset, but a post-hemorrhagic rise with a late maximum.

11. In skin lesions of early infancy the platelets may be high or rather low, depending on the condition of the child.

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DEMINERALIZED FOOD AND CANCER.

BY HORACE PACKARD, M.D.,

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THE following is a brief résumé and preliminary report of the result of several years of study and investigation of cancer. Very early in the course of research it became apparent that some other line of study of a broader and more comprehensive character than laboratory search for a cancer cell or a cancer microbe or a cancer toxin must be followed if we are to hope for prevention or cure of this scourge of the human race.

Coincident with study of the natural history of cancer in the human family, many facts more or less intimately connected with the subject gradually obtruded themselves. These will be briefly alluded to as an introduction to arguments,

deductions and conclusions suggested by the announced title of this paper.

1. *Demineralization of food products in modern civilized life.*

In considering this question, the query at once arises, "How important a part do the mineral ingredients of foodstuffs play in the maintenance of life, health, strength, endurance and resistance to disease in the human family?"

The normal food of the human family consists of cereals, vegetables, fruits, flesh foods and animal products (eggs, milk, cheese, butter). In the process of manufacture and cooking of some of these they undergo large losses of the mineral elements and finally reach the human tissues practically demineralized. This is particularly true of the great staples, bread, potatoes and rice, while the flesh foods, consisting mainly of the muscle tissue of animals, afford but a meager supply of the food salts. It has thus come about that while all the lower animals receive into their systems all of the mineral salts which nature normally stores away in cereals, vegetables, grasses, nuts, other animals, etc., upon which they live, the members of the human family receive a very precarious supply.

2. *Modern organic chemistry and physiology teach that the mineral elements of plant life are absolutely necessary to the highest degree and type of animal life and the maintenance of health and vigor and resistance to disease.*

Plant life is the connecting link between the crude minerals and salts of the earth and animal life. In the chemistry of plant life carbon from the air and nitrogen and water from the soil are taken up and transformed into the classes of familiar food materials which we term proteins, carbohydrates and fats. Coincident with the taking of these elements from the soil, many of the earth minerals and salts are also taken and elaborated and mixed more or less intimately with the albumins and carbohydrates. These mineral salts contain the elements, phosphorus, calcium, potassium, sodium, iron, silica, magnesium, sulphur; probably others in infinitesimal quantities. We know that lime and phosphorus are absolutely essential to the growth and development of the bones and teeth and for their maintenance in adult life, and that the human body would be a shapeless mass of jelly without them; that potassium and phosphorus must be supplied for the muscles, and sodium chloride and iron for the blood.

Our knowledge of organic chemistry is so meager that we know little or nothing of the influence of the food salts upon the ultimate cells of the epithelium, endothelium, the nerves and nerve centers, connective tissue, and the structures of the organs of special sense, secretory glands, etc., but it is undoubtedly true that they could not exist and functionate without them. The salts of potassium, sodium, calcium, phosphorus, iron, silica, magnesium and sulphur, as abundantly found in commonly used vegetable food products, such as the cereals, potatoes, fruits, etc., are equally if not transcendently

important with the proteins, starches, sugars and fats in the maintenance of vigorous, healthy animal life.

An enormous amount of attention has been given in the past to the adjustment of nutrition in so far as it relates to proteins, carbohydrates and fats, but not much thought has been devoted to the rôle of the mineral food salts as elaborated by nature in the food vegetables.

No argument is needed to substantiate this claim, when we face the fact that for centuries we have complacently seen all the flour mills of the world sending out to the public a material for bread-making consisting of but little more than wheat starch, while the salts of phosphorus, calcium, sodium, potassium, iron, magnesium and silica, in which wheat is particularly rich, are cast away. The demand of the civilized world is and has long been for bread which is white. No other article of food is in such universal and daily use among civilized nations as white flour bread. There are still communities of people so isolated from the civilized world that the material for making bread which is white does not reach them, or, if at all, in such small quantity that it constitutes but a trifling proportion of their dietary. The interesting and impressive thing about these people is that they do not have cancer, or if at all, to so slight a degree that it is a negligible quantity. Those people, who inhabit the tropical portions of the earth, furnished by nature with a bountiful food supply of fruits and vegetables, rich in the food salts, which they acquire with the outlay of scarcely more effort than plucking from the trees, and which are consumed mostly without cooking, are cancer-free, or if afflicted at all, in so slight a degree that it is a negligible quantity. Turning now to the temperate zone: Along this belt of the earth are the nations which have reached the highest type of civilization, and it is strictly among these people that cancer has steadily augmented until it has reached proportions which constitute a scourge.

There are at the present writing approximately two hundred and fifty thousand persons afflicted with cancer among the people of the United States alone. England, France, Germany, Austria and all the other central European countries suffer from cancer in about the same ratio, viz., from eighty to something over one hundred to every ten thousand of population. For a time the Scandinavian countries and Ireland lagged behind, with a cancer percentage considerably below the other central European countries, but with the now almost universal use of bolted wheat flour for bread-making, the percentage of cancer-infected people has risen to approximately that of the other European countries. Among the great rice-eating nations the same habits of diet exist except that rice is the staple cereal instead of wheat. The process of milling rice polishes off all, or nearly all, the portions which bear the mineral salts, leaving scarcely more than starch. Therefore, if the theory of demineralization of the staple foodstuffs of the world as a negative factor in the causation of cancer be a tenable

one, it fits in with the actual conditions in all the civilized nations of the earth.

Now to the actual test. It is only within the past year that this mineral starvation theory as a possible factor in the causation of cancer has shaped itself in the writer's mind, and obviously not enough time has yet elapsed to prove its truth. It can only be said that some cases of inoperable recurrent cancer which were placed upon a diet and treatment in conformity with this theory in the spring of last year show an apparent arrest of the disease and a general condition of good health quite at variance with former experience in similar cases.

This communication is presented, not with the intention or wish to make extravagant claims that a method or principle of immunity against cancer has been discovered, but to ask the co-operation of my fellows of the medical profession to put to the test, in the promptest and widest possible way, this simple and easily applied method of dietetic management of all cancer cases under their care. Neither is it put forth with the thought of displacing any of the well-established methods of cancer treatment which are now in vogue, but as a definite food régime entailing no hardship or self-denial, based upon a plausible theory of cancer causation and prevention.

Considerable difficulty has been experienced by the writer in establishing patients upon a diet rich in the vegetable food salts, because of the vague ideas abroad of what constitutes whole wheat bread, and of the difficulty in getting a palatable bread made in the homes or from public bakeries. In the bake shops very little attention is given to anything except white flour bread. What they produce under the designation of graham bread, whole wheat bread, health bread, etc., is too often unpalatable, coarse and sour.

There are two whole wheat flours in the market which are finely milled, sweet and nutty in flavor, and which contain all or nearly all the food salts of the wheat.¹ A recipe has been developed for a bread from this flour which is eaten willingly and even with zest.²

The dietary for cancer patients in conformity with the food salts theory should be something as follows:

1. Exclude all white flour bread, and all articles into which white flour enters, from the diet, and substitute for it bread made from whole wheat flour as above outlined.

2. Potatoes next to bread form the most important and widely used article of diet, and properly conserved in cooking they are rich in the food salts, which are located in the peripheral portion immediately beneath the skin. Therefore, one or two baked potatoes daily are advised prepared as follows: Discard the heart or central starchy portion and eat the peripheral portions rich in mineral ingredients, conserving to the very outer skin. The common way of cooking

¹ Franklin Mills and Ralston.

² One pint scalded milk, 1 pint boiling water, 2 tablespoonfuls butter, 1 tablespoonful lard, 1 tablespoonful sugar, 1 teaspoonful salt, 2 tablespoonfuls molasses, $\frac{1}{2}$ yeast cake, $2\frac{1}{2}$ quarts whole wheat flour.

potatoes, by paring raw, soaking in cold water for an hour or two, then boiling, dissolves out and boils out about 50% of the food salts.

3. Encourage the eating freely of well-cooked fresh vegetables, apples raw or cooked in any way, and fresh ripe fruits.

4. Meats and fish may be used moderately according to inclination, bearing in mind that these probably make no difference one way or the other in the development or growth of cancer. Flesh foods as consumed by the human family are relatively poor in the food salts, and at best the elements of such food reach us second hand and constitute a very poorly balanced article of diet, in that we consume almost exclusively the muscle tissue, thus getting none of the food salts stored in the nerves, bones and other structures.

A certain amount of protein must be included in the dietary, and if not taken as flesh food it must be made up in eggs, cheese, milk and leguminous vegetables.

Laboratory experiments have been under way in the past few months looking to the extraction of food salts from vegetable sources and their preparation in a convenient form for administration to augment, where advisable, the supply in ordinary food. Success has followed in so far that a precipitate has been obtained which chemical analysis shows to contain iron, aluminum, calcium, magnesium, potash, potassium, sodium and the acids of chlorine, sulphur, phosphorus, silica and fluorin. This material bears all the food salts normally found in animal bodies, and in a form and from a source which we may reasonably assume insures its assimilability by animal tissues.

The writer begs from his colleagues of the medical profession an unprejudiced application of the theories and principles herewith set forth not only in cancer cases, but as far as possible in healthy persons, as a prophylactic against cancer. As adult life is reached and the cancer age approaches, the natural course of events in most people is a cutting down of the total amount of food material. The daily amount of food salts becomes, under the prevailing régime of demineralized bread and potatoes, very small indeed. Vital resistance is lowered, fat-forming food elements predominate enormously over the vitalizing, nerve-sustaining, bone and muscle renewing epithelium and connective tissue regenerating vegetable food salts, and the individual becomes a fat, flabby, anemic, neurotic dyspeptic, the prey of the first cancer microbe which comes his way.

The changing of the food habits of the nations is a large problem, but it lies with the medical profession and the public press. Civilized, intelligent peoples are not slow in adopting changes which promise enhanced strength of manhood and womanhood, longer life and increased immunity from disease. If the public demand that a bread of life shall be forthcoming in place of the colorless, demineralized, debilitating, constipating apology for bread now in popular use,

then and not until then will the great flour mills send forth a flour for the world's bread containing all the food elements which nature's chemistry has stored away for the support of strong, robust, disease-resisting human life.

It is the earnest conviction of the writer that by this expedient alone the cancer rate may be reduced from its present appallingly high rate to twenty-five or less to the ten thousand.

Clinical Department.

DELAYED TOTAL ABSORPTION OF A TRAUMATIC CATARACT AFTER SETTLEMENT WITH AN ACCIDENT INSURANCE COMPANY.

BY DAVID COGGIN, M.D., SALEM.

MR. S., sixty-two, a commission merchant, while splitting wood, was struck by a splinter on his left eye, producing a central abrasion of the cornea. The eye was red and painful, and vision, which was formerly good in both eyes, was reduced in the left to recognition of fingers merely. An opacity formed in the left lens; there was no hemorrhage, and no wound was seen in the lens. Atropin and a bandage were subscribed. Five months later he recognized fingers. The cataract was apparently unchanged. He declined an operation and later the company had him examined by high authority, who confirmed my diagnosis. Mr. S. received \$750 from the company.

Sequel: Four years later he appeared because of a chalazion of the right eye and he said that for some months he had seen better with the injured eye. It was found that the lens had become almost completely absorbed, as if it had been incised. He denied that the eye had been struck or operated upon. He could read the finest type with a suitable lens, but he declined a glass for that eye.

It is certainly unusual for a traumatic cataract to remain unchanged for years, hence this anomalous case seems worth reporting.

Reports of Societies.

WESTERN SURGICAL ASSOCIATION.

TWENTY-FIRST ANNUAL MEETING, HELD AT KANSAS CITY, MO., DEC. 18 AND 19, 1911.

The President, DR. AMOS W. ABBOTT, Minneapolis, Minn., in the chair.

THE PATHOLOGY THAT REMAINS AFTER NON-SURGICAL TREATMENT OF INFLAMMATION WITHIN THE ABDOMINAL CAVITY.

DR. J. W. COKENOWER, of Des Moines, Ia., read a paper on this subject in which he drew the following conclusions:

1. "That pain in the abdomen is nature's signal of distress and always means something, but should not be relieved to the extent that it will retard or prevent ascertaining the cause that produced it."

2. "That infection in the abdominal cavity is not unlike infection in any other part of the body, and as soon as the diagnosis is cleared up, the cause and pathology should be removed so far as possible in any way that will give the best results."