

— *The Story of Tre-en-en* —

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(Abbreviated Version)

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I. Introduction

I grew up on a farm. I distinctly remember the disgust with which my family observed weevils multiplying in the flour in our home, after it was stored for a period of time. As I grew to adulthood, my parents in their shopping habits sought out the flour and grain products which would not become infested with insects. The health of family members deteriorated with the refining and processing of our dietary staples. Life on the farm came to an end after I developed appendicitis. The medical bills linked to my surgery ended my father's dream of establishing a dairy herd. My mother developed chronic fatigue and "bones like a little old lady" (according to her doctor). She suffered for years. I share her story later in this paper.

Today I never see insect life in any grain product. These products no longer have the capability of nourishing and sustaining insect life. The world has changed, and with it our health. As Weston Price observed prior to World War II, food which can not nourish insects is not going to produce optimal health in children or adults. He wrote the following:

"I have been advised by millers that they could not ship flour if the minerals and vitamins were not removed. At once, we have an important measure of the value of a food; namely, the quality of insect life that it can support. The more valuable the product for human food, the more insect life it will support. Whereas highly refined white flour will support almost no insect life, a good product will support a relatively large amount of insect life in proportion to the volume of flour....Bugs and children require the same minerals and vitamins. Our modern white bread cannot support much insect life."¹

This same principle was recognized by Dr. Roger Williams, discoverer of pantothenic acid (vitamin B5). He wrote, "Why does white flour, now milled by most commercial bakers of bread spoil less quickly than whole-wheat flour? For the same reason that such "denatured" white flour will not support even insect life (much less that of a laboratory rat). Think what it does not do to nourish a human being!"²

Dietary Staples: Key to Long-Term Health

One can gain a fairly good idea of the health and vitality of any society by an examination of the staple foods which are consumed. If the staples are nutritious and abundantly supplied, one will find a vital and energetic society consisting of individuals with keen minds and healthy bodies. Processing or deteriorating the staples of the diet has a harmful impact not only upon individuals, but upon an entire society—much more so than modification of foods which are rarely consumed. Societies in which dietary staples are nutritionally inadequate consist of a great many individuals suffering with poor physical health and mental disabilities. Mental disabilities range from depression to retardation and from violence to mental illness.

It is tragic, therefore, that the staples of the diet—grains, fats, sugars, and dairy products—have been modified in the modern diet. The introduction of modern processed foods coincided with the sudden appearance of nutritional deficiency diseases such as pellagra and beriberi. A more gradual appearance of degenerative diseases such as allergies, asthma, arthritis, cancer and heart disease has also been observed and well-documented.

This paper will discuss research which describes the manner in which the altering of dietary

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staples—especially the grains—has altered the lives of individuals and contributed to societal decay. No society has so foolishly and recklessly altered its dietary staples as has the United States. The consequence has been an epidemic of degenerative diseases and a bill for health care which consists of hundreds of billions of dollars annually. Tragically, these health care costs are calculated as a contribution to the Gross National Product rather than a tragic toll in terms of incalculable human suffering and lost human potential.

Putting our civilization back on the right track must of necessity involve restoring the nutritional properties of these staples or commonly consumed foods or supplementing with the essential nutrients which have been removed as a result of their processing.

Modern Refining

Through much of history wheat was freshly ground between stones at a slow speed. The slow speed prevented the grain from being heated—a tremendous advantage as high temperatures destroy many of the nutrients found in whole grains. Because every community ground its grain locally, the flour was always fresh and highly nutritious.

Grinding wheat between sets of steel rollers was introduced in Hungary in 1839. The new technology was popularized at the Vienna World's Fair in 1873 where those who attended were introduced to fine pastries made of the new fine "Imperial Flour." In 1879 the governor of Minnesota sent to Hungary for engineers to build the first new rolling mills for processing of wheat in the United States.³

It was the advent of the steel roller mill which made it possible to readily separate the germ, aleurone layer and fiber from the starch in wheat. Flour kept much longer with the germ removed and was much less susceptible to insect infestation as it became a poor source of nutrition. Similarly, the removal of bran made a much smoother product available. White flour became so nutritionally impoverished that it could no longer sustain life in the manner characteristic of whole wheat. In 1941 "enrichment" of white flour was begun to add back a handful of nutrients including thiamine, riboflavin, niacin and iron. Fortification with calcium was optional. This basic enrichment program has remained virtually unchanged for over half a century despite dramatic advances in the understanding of nutritional requirements.

Wheat is broken into a number of components in the process of refining. Refining typically results in bread which contains about 70 percent of the original grain. The remaining 30 percent has been used for animal feed. Among the parts of the grain used for animal feed is the aleurone layer which contains not only quality oils, but approximately 15% of the protein, 37% of the riboflavin, 41% of the pantothenic acid, 32% of the thiamine, 61% of the pyridoxine, 82% of the niacin, and 61% of the total mineral content. The removal of the germ and aleurone layers of the grain removes the majority of the nutritional properties from the resulting flour. Small wonder that the discarded portion of the grain builds animals with robust health, but leads to widespread and serious malnutrition in the human population.⁴

Dr. Roger Williams, who discovered pantothenic acid (vitamin B5) and named folic acid, felt so strongly about the deficiencies of the fortification program for white flour, instigated partially by his brother, that he conducted an experiment. Young rats were placed on a diet of enriched white flour. After 90 days two-thirds of the animals eating the enriched bread were dead of malnutrition and "the others were severely stunted." Williams wrote, "Bread holds—or should hold—a unique position as

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the staff of life, a staple basic food.” He further wrote, “Yet, during the milling process, the germ of the wheat grain is eliminated, and with it goes the fatty components and many of the items in the nutritional chain of life.”

Williams was well aware that deficient flour had a rippling effect upon the entire nutritional process because so many food products incorporate flour. Flour is an essential component of “cakes, cookies, crackers, pastries, doughnuts, biscuits, muffins, waffles, pancakes, macaroni, noodles” and other foods.⁵

The removal of the germ is particularly significant as pointed out by Williams. This is the core of nutrition of the grain of wheat. The germ was added to English bread during World War II due to the shortage of food supplies, but removed after the war. This move was anticipated by Professor Bicknell who wrote a classic work called *The Vitamins in Medicine*. He wrote, “For feeding animals, the germ has such high value, that it is unlikely that it will be retained in English bread in peace times, since the feeding of pigs is more profitable than the nourishing of human beings.”⁶

E. V. McCollum, discoverer of vitamin A, wrote, “The system of roller-process milling resulted in use of the most depleted product as human food, while the most nutritious parts of the wheat kernel went into animal feeds. These facts were not recognized until the modern methods of researches on foods and nutrition revealed, about 1920, that refined wheat flour was deficient in a number of essential nutrients and that its proteins were of poor nutritive value.”⁷

Unfortunately, little has changed from the early days of refining of the grains with the exception of fortification of impoverished grain with a handful of synthetic vitamins. Even whole wheat products commonly purchased today are not whole grain. The only way of being assured of buying a healthy whole grain product is to purchase whole wheat berries and to grind them fresh. Labeling laws permit a food to be designated “whole grain” when only 51% of its ingredients are from whole grain sources. Whole unprocessed wheat consists of about 10% lipids and sterols. This high concentration of quality oils is probably responsible for the observation of the remarkable health contributing properties of freshly ground whole wheat products. These quality fats begin to oxidize shortly after the grain is ground. For this reason these quality oils are often removed from even whole grain products. A whole grain product typically contains only one or two percent lipids and sterols. In other words, 80-90% of the quality oils originally present in the whole wheat berry have been lost in the manufacturing process.⁸

The inadequacy of refined foods was demonstrated by a remarkable experiment conducted by Sir Robert McCarrison, chief nutritionist for the nation of India at the turn of the 20th century. He fed one group of rats the superior freshly ground whole grain diet of the Sikhs and another group the diet of the poorer classes in England. This diet consisted of “white bread, margarine, over-sweetened tea with a little milk (of which the rats consumed large quantities), boiled cabbage and boiled potato, tinned meat and tinned jam of the cheaper sorts.”

McCarrison’s first observation was that the well-fed rats “lived happily together.” They increased in weight and flourished. The animals on the British diet did not increase in weight, but were stunted. Their bodies were badly proportioned. “Their coats were staring and lacking in gloss; they were nervous and apt to bite the attendants; they lived unhappily together and by the sixtieth day of the experiment they began to kill and eat the weaker ones amongst them.” McCarrison found that animals fed the British diet were much more susceptible to diseases of the lungs and digestive tract. He believed that a similar pattern of disease would develop among a human population fed a similar diet: “It is not

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unreasonable, therefore, to expect that, other things being equal, similar results will arise in man from the use of these diets.”⁹

Grain and Legume Oils

The true dimensions of the damage to the human body resulting from consumption of refined grains began to be clarified by research conducted at Hollywood Presbyterian Hospital beginning in 1946. Researchers were testing the theory that urinary residues of hormones accurately reflected hormone sufficiency in the human body. This work was conducted with the use of the polarograph developed by Jaroslav Heyrovsky. Heyrovsky won a Nobel Prize in Chemistry in 1957 for the development of this technology. Using this equipment, researchers observed consistent aberrations in several health maintaining bodily functions. The research project led them to attempt to identify the cause of the problems and also to seek a solution.

In the early 1940’s Dr. Earl Freshman pioneered methods of extracting vitamin E from wheat germ. After removal of the vitamin E, Dr. Freshman found that he was left with a waxy, oily substance that contained large quantities of protein, B vitamins, lecithin, unsaturated fatty acids, phosphatides, phospholipids, phytosterols, and long chain alcohols such as octacosanol. He found similar nutrient blends could be extracted from rice and soya husks. The blend came to be called Tre-en-en which is a Greek word meaning three-in-one.¹⁰

The researchers at Hollywood Presbyterian Hospital were familiar with Dr. Freshman’s work. After failing to correct problems they were observing with dozens of supplements they requested samples of Dr. Freshman’s material for experimentation. Improvements in body chemistry of patients were noticeable within a matter of weeks with this new material.

Researchers came to the conclusion that quality fats and oils in grains and legumes were being removed as a result of the process of refining. Paul Meynell who chronicled this research wrote, “The cell-supporting lipids were slipped out of the modern diet with all the eye-evading speed a magician uses with card tricks.”¹¹

This nutritional depletion forced the body to build structures from inferior materials. One observer wrote, “Essential fatty acids as such take part in the formation of the basic structures of life. When the body has to make these bricks without the right kind of clay...it makes bricks that crumble.” In other words, a body built from poor structural components resembles a sand castle built on the beach a low tide. It is preordained to destruction when the tide rises, the only question is how long it will be able to maintain itself against the forces accumulating against it.¹²

These researchers observed that degenerative diseases formerly associated with advanced old age were being reported in younger people. This appeared to be caused, at least in part, by the consumption of excessive saturated fats (primarily from animal fats), and a decrease in the softer, more oily fats found in grains, legumes and other vegetable material.

Americans were attempting to resolve the degenerative conditions by a high intake of vitamins and minerals which appeared to be misguided. One researcher wrote, “I don’t believe vitamins and minerals even keep us alive much longer. They just tend to overpep us—we are restlessly active rather than actually strong and well. Without these essential lipids along with them, these popular supplements actually may over-stimulate us—and kill us sooner.”

The research suggested that “the lack of daily optimal supplies of the essential lipids, both the es-

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sential unsaturated fatty acids and the essential sterols, has been a continuing and unperceived cause” of degenerative conditions considered irreversible. Restoration of these missing components of the diet offered promise that conditions considered progressive and irreversible could be “subject to excellent correction.”¹³

It All Starts with the Cell

These researchers came to the conclusion that the essential lipids were nutritionally important for two reasons. Firstly, they play a role in enabling the hormones to effectively function in the use of all classes of food for complete bodily nutrition. Secondly, the quality fats were involved in building cellular membranes. The bounding membrane of the cell “must permit needed nutrients to pass through into the interior” and it must “keep out metabolites in the blood not needed by that cell.” The cell wall was also responsible for determining which elements within the cell were waste products and allowing them to pass out of the cell. Finally, the cell wall must regulate the amount of water in the cell preventing dehydration or accumulation of excess water (dropsy).

These functions of the cell wall evidence a remarkable innate intelligence on the part of the cell. The number of apparent decisions made by the cell membrane is remarkable. These functions are regulated by the fats in the diet. Research suggested that these essential fats were the very ones being refined out of the diet: “These three functions performed by cell-bounding membranes are believed to be mediated by two different classes or subdivisions of the lipid family. An essential unsaturated fatty acid in the form of a phospholipid interacts with a sterol derived from the non-saponifiable fraction of such food oils as those in cereal germs. Both of these lipids often are in short supply in modern diets. The steroid portion is especially subject to shortage because of filtering of germ oils to improve appearance and prevent spoilage.”¹⁴

In other words, the refining of the grains made it difficult for cells to function normally. An obstacle was thrown up hindering the entrance of nutrients into cells and the passage of waste products out of the cell. Those with this abnormality also became more susceptible to either dehydration or fluid accumulation in the tissues. The accumulation of waste products within the cells is particularly troubling, as tissue cultures do poorly when cellular waste products are allowed to accumulate. A lesson learned by every researcher growing tissue cultures is that it is more important to be consistent in removal of waste products from the cellular environment than it is to supply essential nutrients.

Studies on Athletes

The researchers at Hollywood Presbyterian Hospital conducted extensive studies on boys and young men between the ages of 18 and 36. These individuals all passed standard medical exams. More detailed examination of these men and boys in a resting, unstressed state revealed that protein tissue renewal, energy production, utilization of vitamins and minerals, and pH balance were nowhere near optimal.

These young men were divided into two groups. One group received a supplement of vitamins, minerals, and protein. The second group received essential lipid fractions in addition to these nutrients. The younger men on the lipids showed improvement in both biochemical tests and in athletic performance within two months. The older athletes, professional football players, also improved although there was a three month time lag.

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The key change in these men with regard to their athletic performance was an endurance factor. “They not only felt more vigorous and eager to go, they could go...and keep it up.” The control group felt a lot more energetic, but their biochemical tests did not improve and they lacked this basic endurance factor.¹⁵

Research on the lipids suggested that aberrations resulting from deficiencies could strike suddenly, but deficiencies usually existed for a substantial period of time before symptoms appeared. Once problems began to appear, “much time was required for correction.” In addition it appeared that significantly more “of the missing nutrient is required to correct an established aberration, as compared with what is needed for maintenance of steady health.”¹⁶

GNLD

In the 1950’s a gentleman involved in a business wholesaling coal learned of the research being conducted at Hollywood Presbyterian Hospital. This man’s wife suffered terribly with rheumatoid arthritis—so much so that she could not stand the pressure of the sheets on her bed. A medical detail man reporting on the research to physicians suggested he take his wife to southern California and see if he could enroll her in the research. He sold his business, moved to California, enrolled his wife in the research project, and became a medical detail man himself.

The research project was concluded after the researchers developed an extract from wheat, rice, and soy which they labeled tre-en-en after the Greek “three-in-one.” The research was to be written up and the product shelved. This individual and his wife were alarmed at the possibility of losing access to the supplement which had been developed. Over the course of two and a half years she had completely recovered from her debilitating condition and feared a return to her days and nights of torture.

The couple contacted the lead researcher to learn if there might be some way in which they could continue to obtain access to the supplement. The researchers were open to the idea of making the supplement available to them. He said, “If you will take this supplement and share it with people you will be doing something sixteen times more important than we doctors do. This supplement has the ability to prevent the onset of degenerative disease and there is an old saying, ‘An ounce of prevention is worth a pound of cure.’”

The supplement sold poorly in the beginning. The couple, due to their experience with physicians, spent their time trying to sell the supplement to physicians, but they found they were more interested in working with pharmaceuticals. The supplement was sold to Donald Pickett, a far sighted professional salesman. Mr. Pickett realized that the supplement would not sell well unless it was accompanied by a marketing program which rewarded people for taking the time to explain the difference between this supplement and the others found in health food stores and supermarket shelves.

Mr. Pickett named his company Neo-Life, Greek for “new life.” His vision was to couple the supplement with a marketing program which would provide the average individual with an opportunity to experience not only improved physical health and well-being, but also a stable and prosperous financial future. Neo-Life grew into a large national company through the 1960’s and 1970’s with thousands of people supplementing with tre-en-en oils and other supplements the company innovated.

As he aged, Mr. Pickett realized that he needed to find an individual who could take his company and carry forward his vision. He found a like-minded individual in the person of Jerry Brassfield who owned two companies of his own—Golden and Diamite. Mr. Brassfield bought the Neo-Life Company and began the complex process of merging the three companies into one large international entity.

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Today this company is known as Golden-Neo-Life-Diamite or GNLD.

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