

# **The Root Of All Disease**

## *Condensed Manuscript of E. G. Heinrich's Book*

This book is about minerals and their importance for a healthy and stable life. The material herein relative to metallic minerals has been researched extensively. The portions relative to plant minerals has not only been researched, much of it comes from the experience gained from personal and customer use of a full spectrum of plant minerals. To begin, I want to address minerals in general.

Minerals, as we know them, are locked in the earth's crust. As land dwellers, our main link with minerals is through a diet of plants that are able to extract and assimilate metallic minerals from the soil as they grow. Our secondary link is from meats of animals that eat plants. Minerals are extremely important for our well being, yet they have always been taken for granted, and few of us have given them a second thought. Until a few years ago, no one knew of or cared about the importance of these essential building blocks that are the fundamental source of life. Now that minerals are enjoying tremendous success in the marketplace, it is only prudent that users learn more about them. Mere knowledge of minerals and their differences may shed new light on the controversy coming from the marketing departments of various firms attempting to cast aspersions on competing products. Thousands of mineral salespeople misrepresent minerals and falsely tout minerals as being the answer to all health problems. True, minerals are probably deficient in nearly 100% of the world's population, but minerals are not the total answer to all health problems. Without them nothing else, including vitamins, would benefit. We must remember that in order for minerals to provide their utmost benefit, we may need to make some lifestyle changes. Extending your life and growing biologically younger is now a rational desire, because we clearly have reasonable processes that will do just that. These changes may include a food selection change, better drinking water, more stretching and exercise, less stress, more rest, less smoking and drinking, and the intake of considerably more usable oxygen. A complete spectrum of minerals is the benchmark for ultimate and total nutrition, but not the total answer to excellent health.

During the last ten years, the publicity about minerals became overwhelming, so we saw a number of articles appear about colloidal minerals. I'm sure many of you shared my experience in reading some of this material. Most of the articles were written by individuals who were assumed to be experts in nutrition or at least knowledgeable about nutrition. Some were chiropractors, others were medical doctors, certified nutritionists, and even others who take great pride in stacking all sorts of impressionable capital letters behind their names.

Most of the authors created doubt or made outright statements about the danger of toxic metals in what they called colloidal minerals. In my opinion, few, if any of these writers knew enough about their subjects to make a distinction between the so-called "colloidal minerals", "metallic minerals", and "pure plant minerals." Many of these authors downgraded the so-called "colloidal minerals" saying all sorts of things, which obviously are not true. When you investigate these people, it is interesting to note, that by mere coincidence, most of them sell metallic mineral products.

In order for us to understand the importance of minerals, we need to first understand how minerals are composed. Vitamins, carbohydrates, proteins and lipids are all compounds of the chemical element known as carbon. Minerals from the earth are elements which are not carbon and which are not bound to carbon. These minerals participate in a multitude of biochemical processes necessary for the maintenance of health in human beings and animals that inhabit our planet. Nearly everything on earth is comprised of minerals. Your lampshade, stove, wallpaper, flooring and your automobile would not exist if there were no minerals. God made man from minerals and man requires minerals for his mere existence. Every other living creature has the same requirement. There would be no life without minerals! Minerals control millions of chemical and enzymatic processes which occur in the human body at all times. The same is true for animals. This knowledge should make us aware of the importance of minerals for mankind's survival. Although some are very rare, there are more than 100 mineral elements found on earth. Four of these, oxygen, hydrogen, carbon and nitrogen, make up 96% of our body. The remaining 4% of our body is basically made up in part of the other 70 or more minerals, most of which are no longer readily available to us as I will demonstrate further on.

Our government and scientific community have grouped minerals into two categories. Those that are considered to be required in our diets in amounts greater than 100 milligrams per day are called major minerals. Those that are considered to be required in our diets in amounts of less than 100 milligrams per day are called trace minerals. These minerals are in the same class. The only difference is the name and the daily amount required according to the World Health Organization. There are only seven major minerals. They are calcium, magnesium, potassium, phosphorus, sulfur, sodium and chlorine. Our bodies should contain significant amounts of each! Trace minerals, on the other hand, are present in the body in very small amounts. It is thought that each makes up less than one-hundredth of one percent of our body weight.

The nutritional experts who represent world governments point to 12 or 13 minerals as being necessary for average health and to another 8 or 10 minerals as possibly providing some benefit. I have always wondered why we have never studied the probable necessity of the other 70 or more minerals on earth! Is it possible these other minerals were, and continue to be overlooked because they just aren't available from the soil in any kind of quantity? In my opinion, this is a very interesting question and one that could be answered with a positive "yes"!

Most physicians and many persons live with the mistaken notion that the average diet somehow magically supplies all the nutrients essential for a healthy life. If you believe that, you will die prematurely and never enjoy the good health God intended for you to enjoy. Several times in the past, I have offered a reward to any physician or person who can supply a

diet averaging 2000 calories per day that also supplies all the RDA of essential nutrients. I was never challenged because it cannot be done!

When you think about it, minerals are bound to play an important part in our lives. After all, rocks are the parent material for soil that is the main source of nutrition for plants, animals and ultimately humans. While deficiencies of a single mineral are quite common, what happens if we are marginally low in a number of minerals? We have less energy, we are run-down, we feel bad and we appear haggard. These effects can be easily seen when studies are conducted on those persons who are pure vegetarians, those who consume a large amount of junk food in absence of adequate mineral supplements, or those with poor diets in the absence of adequate mineral supplements.

Also, it is a known fact the absorption of many minerals declines with old age. As the body ages, the assimilation process slows down. Additionally, extreme exertion, stress and exposure to environmental pollution raise our requirements for minerals, especially zinc, calcium and iron. In my own personal research I found and am amazed at the number of people who are not aware of the importance of minerals relative to good health. Most of them seem to have resigned to the fact that you've lived a full life if you die at the average age of 76 after suffering from several diseases for years prior to death. This is a pity!

In my estimation, a very small percentage of the people in the world are aware of the important part minerals play for ultimate health and they are likely not getting an adequate amount without consuming a full spectrum of mineral supplements. This stems from the lack of minerals in our present day foods. To grow and reproduce, plants take up minerals from water and soil, as plants have done for millions of years. According to science, millions of years ago the soil near the earth's surface was saturated with dozens of minerals. At least 84 minerals were available nearly everywhere and some areas of the planet did possess 100 minerals. Science has proven the plants of prehistoric times were rich in minerals because there was an abundant supply for them to feed upon from the soil.

When a plant grows it draws the available minerals from the soil reached by its roots. If the soil contains only a few minerals the plant will only draw a few minerals. We now know the mineral content of plants has been severely altered throughout the last several million years and drastically altered during the last 100 years. When man began to till the soil, wind and rain erosion began to take its toll along with continuous cropping which gradually caused the soils to possess fewer and fewer minerals.

Unfortunately, these millions of years of erosion and centuries of unwise farming practices have made good, mineral rich soil a scarce commodity. Soil tests from all over the world have revealed that our soils are severely lacking in minerals. This in turn leaves us with mineral deficient plants with very little food value for us humans or the animals we eat.

Man developed chemical fertilizers in the early 1900's by making or mining concentrated forms of nitrogen, phosphorus and potassium rather than using living compounds as they exist in nature. These living compounds include manure or humus, a rich variegated blend of bacteria, fungi, molds, yeasts, algae, worms, insects and other tiny organisms. Without an abundant supply of these compounds, which survive only with adequate minerals, our soils become barren and can barely sustain life. The health and survival of all plants, domestic or wild, depends on the health of the soil and its ability to provide a constant supply of minerals. If there is a lack of minerals in the soil, few of the necessary components of good soil exist so plants become stunted, sick and devoid of much of the food value they contained in prehistoric times.

When man began using artificial fertilizers containing nitrogen, phosphate and potash, it was learned that crop yields could be greatly increased. But what appeared to be a blessing has turned out to be a curse. According to the Complete Book of Minerals for Health by Rodale Press, man-made fertilizers upset the delicate balance of minerals and organisms in humus rich soil by killing off the beneficial bacteria, and lacking in the naturally occurring minerals they are less available to plants. Chemical fertilizers can also saturate plant roots with too much of one nutrient making it difficult for plants or crops to pick up and absorb other minerals they need so badly. If minerals are not available to be pulled from the soil by plants, the nutritional value of our food is drastically diminished.

Where can we get the minerals we need if they are not available in our food supply? Well, about the only method available is to initiate a program of mineral supplementation. That is, take food supplements containing a large number of minerals. Various mineral supplement formulations can be purchased from hundreds of suppliers under literally thousands of labels. However, what the industry considers a large and adequate supply of minerals usually is no more than 16 or 18 minerals at best!

Most of the more popular mineral formulations available today contain no more than 10 to 15 minerals because they are derived from clay, ground up rock and soil and ancient sea beds like the Great Salt Lake in Utah. This type of mineral is known as a **metallic, hydrophobic mineral!** Basically, it will not interact with water because it is not water-soluble. The type of mineral that comes from a plant and has been assimilated or digested by the plant and is known as a water soluble, plant **derived, hydrophilic mineral.** This is the type of mineral that is most beneficial for all living creatures.

The few metallic minerals that come directly from the earth are hard to digest or assimilate. Many nutritional experts, doctors and food chemists believe no more than 5% or maybe up to 8% of metallic minerals are actually assimilated by the human body. This lack of assimilation occurs because the hydrochloric acid in our stomach isn't strong enough to totally

dissolve metals during the normal 15-hour human digestive cycle. The balance, or up to 92%, merely passes through the waste system without benefit.

Minerals, even if they are metallic, are of significant value to balance and metabolize our bodily functions. However, you could not live on soil or rock because it is not alive or enzymatically active like plant derived minerals from raw plants. Plant derived minerals that have not been altered by man-made chemicals are, from a medical standpoint, enzymatically active or living minerals.

What about vitamins? Most of us have been hearing about vitamins since we were children. And even today we hear authoritative sources say, be sure to take your vitamins, but seldom do you hear anyone say be sure to take your minerals. Your mother probably reminded you to take your vitamins, but I doubt she ever mentioned minerals. Vitamins are sometimes expected to do more than they are capable. Our bodies can go far longer suffering with a deficiency of vitamins than they can with a deficiency of minerals. Did you know all the vitamins in the world would do us little good without minerals? The minerals in our bodies are so important that the body goes to complicated, even desperate lengths to maintain their balance. If a cell is deficient in a single mineral, it will suffer from a loss of several minerals.

A vitamin can be broken down into its basic elements that are carbon, oxygen and hydrogen. Basically, vitamins are a group of chemically unrelated organic nutrients that are essential in small quantities for normal metabolism, growth and physical well being. Vitamins must be obtained through diet since they are either not synthesized in our bodies or are synthesized in inadequate amounts. Many people have a misconception about vitamins. Thousands have told us they will only use food supplements with "natural vitamins." The so-called natural vitamins do not exist in supplements. Natural vitamins only come from plants. All supplement vitamins are synthesized in a laboratory. Therefore, they cannot be called "natural vitamins." Don't believe anyone who tries to convince you otherwise.

There is a harmony between vitamins and minerals and even though vitamins are nearly ineffective without minerals, they both are necessary. Minerals are quite different from vitamins in their structure and the work they do, but the two enjoy an excellent working relationship. According to Rodale's Complete Book of Minerals for Health, "minerals create a healthy environment in which the body, using vitamins, proteins, carbohydrates and fats, can grow, function and heal itself." It's a known fact that a complete spectrum of minerals raises the acid level of bodily tissues. **What is a complete spectrum of minerals?** I believe a mineral composition or a mineral solution cannot be considered a "complete spectrum of minerals" unless it contains at least seventy minerals. This large number of minerals has to include many of the "rare earth" minerals or there would not be a total of seventy. These rare earth minerals are necessary, in addition to the more commonly known minerals, to raise the acid level in tissues. **Most all bacteria and viruses thrive in and prefer an environment of high pH or alkaline nature.** A complete spectrum of minerals lowers the pH, which raises the hydrochloric acid level, thereby inhibiting bacterial and viral replication. Both extra and intra cellular fluids function properly only because of a carefully maintained ratio of minerals, in conjunction with vitamins, in an acidic solution. The interaction of the two enables the body cells to take in nutrients and dispose of toxins that are the by-products of that metabolism.

A lack of minerals inhibits detoxification. Detoxifying occurs whenever the body begins to expel and eliminate anything that causes the body to be toxic. This can and does occur naturally but if you lack minerals the detox will never be thorough and complete. The poisons will only be completely expelled if you have many more minerals than what most commonly known and nationally advertised brands contain. A strong immune system depends on a clean detoxed body and this can only be obtained from thorough excretion of wastes and anything that is not fully compatible with your bodily functions. Normal detoxing at a physical level can range anywhere from extremely mild bowel or kidney movement, skin rash, aches and pains to very intense discomfort. In the area of detoxification, a complete spectrum of at least 70 minerals makes an incredible difference.

Recently, we've begun to hear a lot about enzymes and anti-oxidants and their importance. Enzymes are extremely important for our metabolic functions, but again they do us little good without minerals. Conversely, some enzymes and vitamins are helpmates to minerals. Some minerals are eager workers, but to perform best they need an enzyme or a vitamin or two to stir them into action. As an example, vitamin C can triple iron absorption. Calcium absorption is impossible without Vitamin D and some magnesium. Many minerals act as coenzymes, the so-called catalysts in chemical reactions with vitamins. This means they function as spark plugs, starting chemical actions where billions of chemical reactions take place every day.

At this point you may ask yourself a question. Is all this publicity about mineral deficiencies and the lack of minerals really true and if so, which minerals and what kind of minerals should I be using? In my opinion, at least part of your question can be answered with this little story.

Many movies have been made about the migration of the American settlers in the early 1800s. We all know they had to cross the great plains of the United States. What we don't know or realize is that few of these people settled in one place for a long period. Every few years, they would have to pick up and move. They'd start a small farm in the Midwest such as Iowa, Missouri, Kansas or Nebraska with a milk cow, a couple of pigs, maybe some sheep and a few children. After a few years, Dad would always be constipated and the cow would quit giving milk. The cucumber plants, tomato plants and farm crops would not grow, so they would almost starve. If they were lucky enough to make it through the winter, they'd load all their belongings into a covered wagon and move west with the milk cow in tow. When they found a suitable place they started another farm. In a few years both Mom and Pop would be constipated all the time. The crops, cucumbers and tomatoes

would quit growing and the cow would again quit giving milk. And, if they survived the winter, they'd load everything in a wagon and move farther west again.

What was the problem? The soil was being depleted! If they didn't have enough land to allow some to be idle from time to time, the land would become barren due to a lack of minerals. Crops and plant growth took minerals out of the soil. The only way to eliminate this problem was to own a piece of bottomland near a river. Only the lucky farmers lived on the bottomland. When it flooded, they'd get new topsoil and silt and additional minerals from miles upstream. So, if they were fortunate enough to have bottomland they didn't have to move. Why? The fertilizer would come to them during the flood. But if they were out on the prairie with no river or bottomland they would be required to move, otherwise the entire family would become malnourished and nearly starve.

This settling and moving process occurred many thousands of times during the last 200 years. This was necessary because the early settlers were actually strip-mining the nutrients from the soils. And if there were little or no nutrients in the soil, their crops and gardens could not grow due to a lack of nutrients and minerals in the soil. Depleted soils cannot possibly supply adequate nutrients to our food chain and our soils are becoming more depleted every year.

Commercial fertilizers were introduced in 1908. Was the soil depletion problem solved? Not by a long shot! Study any commercial fertilizer by reviewing the ingredients listed on the package. You will see nitrogen, phosphorus and potassium (NPK) and most times, nothing more. It's a known fact that you can raise most crops and plants with what little nutrients are still in the soil, and NPK. Most farmers never put back more than 4 minerals. In the first place, more than 4 to 6 minerals would be nearly impossible to obtain. Secondly, if they were obtainable and if farmers attempted to put that many back into the soil they would soon be bankrupt. We now understand no more than 12 or 13 minerals are required to raise large, red, juicy tomatoes, but many times if you were blindfolded while eating, you would have trouble identifying the tomatoes due to a lack of taste. The lack of taste is due to a lack of minerals that causes a lack of Brix. Soil depletion is the only reason today's plants contain no more than 16 to 20 minerals, on average, compared to more than 70 minerals thousands, and maybe millions of years ago.

According to research in the animal husbandry field and The National Science Foundation, animals require at least 45 minerals, 12 essential amino acids, 16 vitamins and 3 essential fatty acids. According to Gary Price Todd, M.D., the human body requires at least 60 minerals for optimal health and basically the same other essentials as animals. But, only about 15 minerals are available in any kind of quantity in most of the food we eat today. We know plants can make vitamins, amino acids and varying amounts of fatty acids if they are healthy from being grown in soils containing abundant minerals. If the soil lacks minerals, the plant is stunted because a plant cannot make minerals. Dr. Gary Price Todd says, "Sick soil causes sick plants, which causes sick animals, and ultimately sick human beings."

If at this point, you still do not grasp the fact minerals play an important role in our lives, you might ask the question – What are minerals like calcium, copper and iron from rocks in earth's crust doing in our living, breathing, active bodies? – a lot – Let me mention a few examples. Calcium is essential for all organisms and is found in the cell walls of plants, all calcareous tissues and the bones of all mammals. Calcium is the fifth most abundant mineral element in the earth's crust. Calcium is also the most abundant mineral in the human body comprising approximately two percent of the adult body weight.

**Calcium** is a construction worker so to speak. It is a builder. Calcium gives bones and teeth their strength and rigidity, and also helps nerves to function properly. As a construction worker, it builds strong bones. It is important to know that calcium, to be absorbed, must be in water-soluble form by the time it reaches the small intestines. Calcium needs acid for proper assimilation. Without the proper strength acids, calcium is not dissolved and cannot be utilized. This is one reason a complete spectrum of minerals, with a low pH, is so important. But even more importantly, if utilized properly and in early stages after the foundation is firm, calcium will help build strong bones that will endure a life of havoc. To save your daughter or granddaughter from bone crippling osteoporosis in old age, you should begin giving her extra minerals and especially calcium between five and ten years of age. That startling advice comes from new research by pediatrician Steven A. Abrams at Children's Nutritional Research Center in Houston, Texas.

It's critical that young girls get lots of minerals and extra calcium several years before they reach 11. That's because "most bone-forming activity occurs in the years just before and just after the start of puberty," which on average is age 10, says Dr. Abrams. Menstruation begins two or three years later. By age 15, most bone-forming activity has come to a halt, he says. **The higher the bone mass, the lower the odds of osteoporosis later in life.** As we get older and become less active, bone density becomes a problem. Being inactive accelerates bone loss contributing to osteoporosis. Although it's regarded as a woman's condition, 20% of osteoporosis sufferers are men. Men tend to develop osteoporosis a few years later than women, because initially they have more bone mass. So extra minerals are necessary for everyone at all ages. Remember to supplement your calcium intake with adequate amounts of Vitamin D because calcium absorption is nearly impossible without Vitamin D. Incidentally, some very creditable sources say chromium picolinate, used along with a complete spectrum of minerals, can really benefit the user. In my opinion, nothing can produce more results in this area than a complete spectrum of minerals.

**Iron** is part of a substance called hemoglobin, which carries life-sustaining oxygen to our cells. Iron, along with copper, appears to have participated very closely together in the evolution of aerobic life, maybe as long as three billion years ago! Iron is rather poorly absorbed and the condition most commonly associated with iron deficiency is iron deficiency anemia. Personally, I believe iron is very important regardless of what some health officials and the media reports say, especially if

the iron comes from plants. Iron is stored in the bone marrow and liver. Symptoms of iron deficiency include listlessness, fatigue, memory problems and heart palpitations.

**Copper** zinc and cobalt, among other minerals are necessary for enzyme activities such as food digestion. Copper also plays a significant role in respiration. Copper may help prevent cancer, especially of the liver. Copper, like zinc, is involved in healing. It is necessary for hair, skin and cell growth. Copper deficiency is widespread and numerous diseases caused by a copper deficiency are quite common. Copper deficiencies have also been linked to loss of hair and lowered resistance to colds.

**Sulfur** may be one of the most important minerals for humans. It is a non-metallic mineral, widely distributed in nature. It is an important structural atom in many proteins and small organic molecules. Sulfur is involved in the quality and maintenance of many types of tissues and structures within the body including hair, fingernails and skin. It combines with nitrogen, carbon and hydrogen and oxygen to build protein, a main ingredient of muscles, skin and organs. It has been called the "beauty mineral" because it enhances those body externals. **Sulfur also plays an important role in the production of insulin. Diabetics should consume lots of sulfur.** We know of many Diabetics who have virtually eliminated the disorder after consuming a mineral composition containing large amounts of sulfur for six to twelve months. Sulfur has also been used with favorable results in treating arthritis because it is an integral part of the amino acid, cystine. It aids in healing surface wounds and skin disorders such as psoriasis and eczema. I'm convinced none of us get enough sulfur and I believe the RDA should be increased by at least thirty times. Look for foods and mineral products that contain high amounts of sulfur. **Sodium** and **potassium** regulate water balance and aid in digestion. If it were not for these two minerals we would bloat or swell up with water or we would dehydrate, dry out or die. Potassium is an extremely important mineral.

**Phosphorus** is also an extremely important essential major mineral, but it receives little attention from many nutritionists because, supposedly, it's abundantly available in all foods. Due to soil depletion this is not necessarily true today. Our bodies contain about two pounds of phosphorus that, when tied to calcium, helps give strength and rigidity to bones and teeth. It also controls energy release. Phosphorus has more functions in the body than any other mineral. A lack of phosphorus causes us to overeat. In fact, according to the Complete Book of Minerals for Health, if our body has too little phosphorus we'd have to eat practically nonstop just to maintain basic metabolism. Maybe this is a reason for so much obesity around the world! I have been studying overweight people for fifteen years. I believe most are overweight because they are minerally deficient in general and severely deficient in phosphorus. They continually eat more and more attempting to satisfy a craving, which is caused by a lack of phosphorus and other minerals. The excess food makes them become overweight, which in turn requires more minerals to function, thereby requiring more food in an attempt to satisfy an even larger craving. This can continue to perpetuate. Most overweight people have a toxic body and a complete spectrum of minerals can greatly reduce that toxicity.

I have witnessed thousands of people lose weight naturally after they began to consume a full spectrum of 70 or more minerals on a daily basis. People don't eat as much when they get more minerals. They detoxify and they digest their foods much more thoroughly as well. Better digestion means less constipation, more energy, less sluggishness, more motivation, better attitude, etc. Minerals make it happen! The proof is as obvious as sunlight. Our body is made up of about 100 trillion cells, each one bustling with activities that depend on magnesium.

**Magnesium** is essential to all living creatures and has electrochemical, catalytic and structural functions. In fact, next to potassium, magnesium is the most plentiful mineral inside each cell. Magnesium is closely related to calcium in regulating and controlling nerve impulses, especially the heart beat. Magnesium helps deliver energy by activating the production of a special substance called adenosine tri-phosphate which extracts energy from the foods we eat and delivers it to each and every one of those billions and billions of cells in our bodies, whether they are in the heart, lungs, kidneys, brain, blood or bone. Magnesium is one of the most important major minerals, and a deficiency in it appears to be the basic cause of atherosclerotic calcium deposits.

**Chlorine** is another one of the major minerals! Chlorine's intended use from Mother Nature was not to disinfect our water or swimming pools, but to help digest our foods. Chlorine is found in virtually all of our foods. As a part of hydrochloric acid, chlorine rallies the digestive juices of the stomach to help digest proteins. A combination of hydrochloric acid and powerful digestive enzymes gobbles up food particles, mashing them into a semi-fluid pulp called chyme, which is squirted into the upper intestine for final digestive breakdown. Chlorine helps detox the liver and it's a terrific stomach anti-parasitic.

It helps eliminate anaerobic bacteria. Here is something of importance relative to chlorine. Chlorine in water is entirely different than chlorine in food. The chlorine used to disinfect water is an activated form of chloride with absolutely no nutritional value and the chlorination of water may, in fact, cause some serious health problems.

The previous review of some of the more recognizable minerals is important, but we must think about some of the rare earth minerals most people don't recognize. Just because few, if any, tests or studies have been conducted, they should not be overlooked. I truly believe these "unheard of" minerals play a very important part in overall good health. Try to look for mineral supplements with most, if not all, of the following minerals: Boron, Barium, Beryllium, Bismuth, Bromine, Carbon, Cerium, Cesium, Cobalt, Dysprosium, Erbium, Europium, Fluorine, Gadolinium, Gallium, Holmium, Indium, Iodine, Iridium, Lanthanum, Lithium, Lutetium, Neodymium, Niobium, Osmium, Palladium, Praseodymium, Rubidium, Samarium, Terbium, Thallium, Thorium, Vanadium, Ytterbium, and Yttrium.

We could have written much more about major minerals, but what about trace minerals? According to our government, the

trace elements that are required for human health are iron, iodine, copper, manganese, zinc, molybdenum, selenium and chromium. My experience with minerals over the last twenty years has basically proven we need many more minerals than those proposed by our government. I believe all of the rare earth minerals mentioned in the previous paragraph are extremely important for protracted health, especially if they were available from plants.

Minerals initiate, regulate and control every organ and function in our bodies. Proper breathing depends on minerals. Mental and physical ability depend on minerals. Heart and blood pressure stabilization is directly related to minerals. Although other factors play a part in high blood pressure, minerals are the key to regulation. When the body or any organ becomes stressed out, it will require more nutrients and oxygen to keep it going. Minerals help the body better utilize the oxygen it receives. When stressed, the heart has to pump blood more forcefully to supply enough blood to the organ that needs it. The stronger the heart is required to pump the higher the systolic blood pressure will be. The diastolic pressure may also go up. To get a true reading, medical professionals require you to be relaxed or at rest. The blood pressure in a relaxed or rest state is called "basal" blood pressure. People in the hypertension state usually have the average systolic pressure above 140 and the diastolic pressure above 90.

When a person takes in excessive amounts of salt, the body may have to remove the excess to avoid poisoning. The body will need to collect more water because the salt has to be dissolved in liquid. The kidneys will have an additional workload in order to get rid of all the excess salt and water. This means the kidneys will need more energy and nutrients, especially minerals to keep them functioning properly. During the salt and water elimination process the systolic pressure will go up because more blood has to be pumped out of the heart. If the kidneys cannot perform properly due to a lack of nutrients, even when the blood pressure is raised, the body stores the salt water and the ankles or legs will swell. Also, all the excess body tissue, especially fat, will require more energy to feed the extra fat in the body. This is the main reason obese people should give strong consideration to losing weight and consuming more minerals. A full spectrum of minerals will help them lose weight.

Mineral-insufficiency and trace-element-insufficiency problems are actually more likely to occur than are vitamin insufficiency situations. Those at increased risk of such insufficiencies include people who eat low-calorie diets, the elderly, pregnant women, people on certain drugs (such as diuretics), vegetarians and those eating foods from areas where the soil is extremely deficient in certain minerals. The soil of Alaska, for example, is very rich in selenium, while the soil in certain parts of China and New Zealand is very poor in selenium. Thus, you can eat foods from those areas, eat a perfectly "balanced" diet, as recommended by most medical doctors, take the average mineral supplement, and still develop severe mineral deficiencies or trace-element deficiencies that can only be averted through dietary change and supplementation with a complete spectrum of minerals. Sub-optimal intake can be due to factors other than soil depletion. These factors are as diverse as the effects of acid rain and the over-refining, over-processing of foods.

Our vulnerability to even minute dietary imbalances in minerals can be appreciated by comparing, to begin with, our daily mineral intake (about 1.5 grams) with our total intake of carbohydrates, proteins and lipids (about 500 grams). Thus our mineral intake represents only about 0.3 percent of our total intake of nutrients, yet minerals are so potent and so important that without them we would not be able to utilize the other 99.7 percent of foodstuffs and would quickly perish.

There has been a strong tendency on the part of some dietetic and medical professionals to discourage people from taking more than the RDA's (Recommended Daily Allowances) daily values of minerals that can be obtained, they say, in the typical American and European diet. Unfortunately, numerous studies have shown repeatedly that this is very poor advice. It is a proven fact that many, possibly most, people on earth are not getting the RDA's, even for the recognized minerals in their daily diets. Again, this is because most of our raw foods contain a minimal number of minerals and even become more superficial when they are over processed and over cooked. A lack of minerals can place stressful situations upon our resistance to disease. Supplementation, therefore, not only seems advisable, it is advisable!

Evidence is accumulating from recent studies that mineral/trace-element supplementation may help prevent various forms of some degenerative processes. Proper supplements can eliminate many of these processes, even after they are detected. Minerals are especially important in this area to make vitamins more beneficial.

As you've already heard, plants can make vitamins and naturally from our mineral experience during the last twenty- five years, I believe we should be using plant minerals. However, as stated previously, plants cannot make minerals! So, where do we get them? From plant derived minerals, the best overall water soluble minerals on earth.

We have studied the effects of minerals for more than twenty years. The results were amazing! I had personal experiences that would nearly make one believe in miracles. We have received thousands of phone calls and letters from our mineral customers who proclaim unbelievable cures, alleviations and astonishing benefits from the use of plant minerals. However, we are not allowed to publish this information. By law, it must be suppressed or we could be accused of practicing medicine without a license. Isn't this ridiculous? You could have the best health improvement product on earth but you aren't allowed to publish its merits if you're not a member of the drug society. I believe the suppression of information that might prove useful is contrary to the maturity and health of any free society.

Even though we are not allowed to tell people the truth, our trial and error tests and observations of the reactions and testimonials from thousands of people have convinced us that nothing is more beneficial than a complete spectrum of pure plant derived minerals. In my opinion, the main reason our Minerals provide such tremendous benefit is because they contain an unusually high amount of sulfur. Sulfur also aids in the utilization of calcium. As an example, many middle-aged

women have reported some interesting facts. They were severely calcium-deficient when they began to consume our Minerals. After using the liquid minerals at two ounces per day for more than a year, they were no longer calcium-deficient. This occurred without the aid of additional calcium intake. Maybe this occurred because of the high amount of sulfur. Incidentally, it is my opinion that we may not require nearly as much calcium as assumed if we supplemented our diets with a complete spectrum of minerals that come from plants. I truly believe this to also be true with respect to the RDA of other minerals. We may not need nearly as much as previously assumed if we were using a complete spectrum of plant minerals.

Have I captured your attention, relative to minerals, since the beginning of this book? If so, maybe you can help answer this question. Just how important are minerals for good health? And, do minerals prevent disease? Let me recite a now famous statement from Dr. Linus Paling, two time Nobel Laureate. He said, in his opinion, **"One could trace every sickness, every disease and every ailment to a mineral deficiency!"** If his statement is true, and I believe it is, **"The Root of All Disease"** is a lack of minerals! I have been monitoring and studying thousands of mineral deficient people for twenty-five years. In my opinion, heart disease is a direct result of a mineral deficiency! Did you know we lose more people in the United States every year from heart disease, than we have lost in all of our wars combined since the signing of the Declaration of Independence? This is staggering and the number is increasing each year!

The heart surgery industry in America is booming. We have the statistics from several years ago and I'm sure they are even more staggering now. According to the statistics of the American Heart Association, in 1995, 1,460,000 angiograms (the diagnostic procedure that starts the ball rolling) were performed at an average cost of \$10,880 dollars per procedure. This resulted in 573,000 bypass surgeries at \$44,820 dollars per surgery and 419,000 angioplasties (the balloon procedure for opening up arteries) at \$20,370 dollars each. The total bill for these procedures was over \$50 billion dollars that year. Now, if you have trouble grasping the magnitude of \$50 billion dollars a year, try \$137 million dollars per day, or \$5,700,000 per hour or \$95,000 every minute. According to Julian Whitaker, a medical doctor, other than their costs, the only thing definitely known about these procedures is that they do kill people. Roughly one in 25 patients having bypass, and about one in 65 patients undergoing angioplasty die from the procedure. I am not a doctor, but from my experience of watching and studying thousands of people, I am convinced heart disease would be dramatically reduced if everyone consumed a full spectrum of plantderived minerals every day.

Nearly everybody, especially so-called nutritional experts, misunderstand or don't appear to know anything about plantderived minerals. They group plant-derived minerals with metallic minerals that come from oyster shell, calcium carbonate, limestone, soil and clay and sea salts. Supposedly too much of some of these metallic elements have toxic effects on the body. Again, according to Dr. Todd, the human body is not designed to absorb or assimilate and use metallic minerals. The health food industry recognized the metallic mineral absorption problem, of no more than 8%, in the mid 70's. Chelated minerals were developed in the laboratory. This process involved wrapping amino acids or protein around metallic minerals to help the body metabolize them. This did help the problem because these added dissolvers did increase the assimilation to about 40%. However, chelated or not, the fact remains, they are still metallic minerals.

Don't be misled with this newly formed Ionic Mineral jargon. Someone just found a new name for an old metallic element solution that really doesn't contain many minerals but it does contain a lot of sodium. The definition of an Ion is "an electrified atom or group of atoms." This could describe nearly anything on earth.

We all know about toxic metals (toxic metallic minerals) and most people have been led to believe the so-called toxic minerals are bad regardless of their source. This is not necessarily true. Let's take aluminum as an example. Aluminum, as found in the earth is a metallic mineral. It has always bothered me to learn that so many of our supposed leaders, intellectuals, doctors and nutritionists know so little about this element. It has been criticized beyond belief. Granted, metallic aluminum, like that which can be dissolved or leached from aluminum pans or utensils may be extremely harmful and I truly believe it is. But, what about aluminum from food? You're probably asking yourself, "Did he indicate foods contain aluminum?" Don't be surprised because the answer is a resounding YES!

Foods also contain other supposedly toxic minerals. Questions have been raised about the presence of Aluminum, cadmium, lead and mercury and other possibly toxic minerals. These questions are certainly reasonable and there are theories on both sides of the issue. However, experimental trials with measurements of toxic mineral levels over time are a more accurate way of answering these questions than theories, however reasonable they may seem.

Gary Price Todd, M. D., an ophthalmologist practicing in Waynesville, North Carolina conducted such a trial. Dr. Todd worked with liquid plant derived minerals for more than five years. He asked his study group to take three ounces of the liquid minerals each day, a potent dose, along with three grams of vitamin C and a multiple vitamin/minerals supplement. He chose to "follow" aluminum, cadmium, lead and mercury levels in hair specimens over time. He said hair levels of potentially toxic minerals are more accurate than blood levels, as our bodies "clear" these minerals from the bloodstream relatively fast.

Dr. Todd reports that at three months time, levels of aluminum, lead and cadmium had all risen slightly. Mercury was not significantly changed. At four to six months time, levels of aluminum, lead, cadmium and mercury had all decreased dramatically. In a different group of individuals, measured before treatment and at eight and sixteen months, levels of aluminum, cadmium and lead all declined. Mercury in this group was not at detectable levels either before or after treatment. Dr. Todd points out that successful clearing of potentially toxic metallic minerals (as well as other potentially toxic substances) from our bodies, first requires "mobilization" of these minerals from the "storage" sites such as bones, teeth, etc. If this "mobilization" is successful, the potentially toxic minerals are then cleared from the body and measured levels decline over time. This occurred with every individual in Dr. Todd's study. He stressed the need for Plant Minerals to detoxify the body in order to remove the toxic metallic minerals.

Let's get back to aluminum. All aluminum that comes from food is pre-assimilated by the plant, and it is naturally tied to hydrogen in the form of sulfate. Plant derived minerals are naturally rich in sulfate. Naturally occurring aluminum sulfate minerals are called alums, which are used in styptics and antiseptics. We all know aluminum hydroxide is used extensively as food additives throughout the world. Therefore, if aluminum is harmful, why have you lived so long, and why is it used in food processing or as ingredients in deodorizers, antacids, and face makeup and nearly without exception in many municipal water systems throughout the world? Alum sulfate increases stomach acidity and improves digestion and the absorption of nutrients, stimulates gastric and pancreatic secretion and has a mild diuretic effect. Incidentally, the World Health Organization estimates that the average adult dietary aluminum intake ranges between 10 and 15 milligrams (mg) daily. See if you agree after reading the next several pages.

Aluminum is one of the most abundant minerals on earth, second only to silica. It is in virtually everything we touch, most of the air we breathe, most water we drink and in most food we eat. I am particularly alarmed to learn government officials in some countries either are not aware of or want to suppress the fact that aluminum is also one of, if not the most abundant minerals in many of our foods! One Scandinavian country says it is unlawful to consume more than 2 mg of aluminum per day, regardless of the source! We spoke to several well-known laboratory and food chemists about this country's legal limits. Needless to say they all had a belly lurching laugh over this. Can you imagine an entire country, in this advanced age, being so uninformed about food? Apparently, the U. S. government is aware of aluminum in food because the U.S. does not have an established limit. If we did, we would have a hard time staying alive. This makes me wonder what foods people in this Scandinavian country eat.

We were able to obtain copies of the results of lab tests for aluminum in certain plant foods. The results came from the A & L Laboratory Agronomy Handbook used by many agronomists worldwide. The page headings state "Plant Analysis Guide Nutrient Sufficiency Ranges." I understand the tests are made on plant petals, vines or even the fruit or nut, depending on the type of plant bearing the food. The amounts are listed in parts per billion (PPB). Before I go any further, let me say that PPB and MCG/L (micrograms per liter) are considered one and the same. The test results have a low amount and a high amount that were obtained from different tests on the same food or plant species. I am listing the averages below.

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<u>Plant Or Food</u>	<u>Aluminum In PPB</u>	<u>Plant Or Food</u>	<u>Aluminum In PPB</u>
Bananas	97,000	Peas	45,000
Coffee	97,000	Peppers	75,000
Pineapple	100,000	Potatoes	100,000
Oil Palm	98,000	Root Crops	140,000
Asparagus	90,000	Tomatoes	90,000
Beans	165,000	Corn (at tasseling)	140,000
Brussels Sprouts	65,000	Mint	140,000
Celery	190,000	Peanuts	75,000
Cucumbers	90,000	Small Grains	135,000
Head Crops (lettuce)	90,000	Soybeans	75,000
Leaf Crops	50,000	Wheat (high yield)	140,000
Melons	65,000		

I suppose you are surprised as I was the first time this was brought to my attention. I was even more astounded recently when we were visited by one of our Japanese distributors and their Ph.D. food chemist. He gave us a book published by the Japanese FDA (JFDA), listing the minerals found in every conceivable food. The categories in this book include many species of fish, fowl, all edible animal meats, nuts and berries, fruits, vegetables, and all types of beverages. All total, there are more than two thousand listings and every one contained aluminum. A total of only twenty-eight combined minerals were found, in these two thousand edible foods. This is a good example of the mineral deficiencies throughout the world! Many of these foods also contain arsenic and lead. Below you will see a few of the listings that were not included on the previous page. The amounts in this book are relative to micrograms per only three and one-half ounces (3 1/2 oz.) of each food item.

## JFDA Aluminum Amounts in (3 1/2 oz) Foods

<u>Plant Or Food</u>	<u>Aluminum In PPB</u>	<u>Plant Or Food</u>	<u>Aluminum In PPB</u>
Round Herring Sardines	34,000	Bologna	1,900
Scallops	6,900	Pork Products	2,400
Shrimps	1,300	Liver Paste	1,100
Condensed Skim Milk	670	Green Asparagus	610
Skim Milk Powder	1,200	Turnip	1,200
Cheddar Cheese	2,000	Pumpkin and Squash	1,500
Sugukina	3,600	Royal Fern	19,000
Radish	1,500	Eggplant	13,000
Apricots	1,000	Avocados	390
Figs	1,600	Sencha Tea	100,000
Chili Powder	6,000	Bancha Tea	332,000
Curry	23,000	Oolong Tea	247,000
Cocoa	17,000	Allspice powder	7,300
Clove Powder	14,000	Black Pepper	8,100
Horseradish powder	3,900	Cinnamon Powder	7,900
Sage Powder	64,000	Nutmeg	113,000

It is interesting to note that a glass of skimmed milk contains as much aluminum as one week's supply of liquid minerals that are leached with only pure, contaminant free water. Please review tea again. Today, everyone is touting the benefits of tea. Note that three ounces of Bancha Green tea contains more aluminum than a 60-day supply Minerals. The most interesting fact is all of the consumables listed contain minerals that are negatively charged by Mother Nature. All metallic minerals, including those "washed in" minerals, like those from the Great Salt Lake, have a natural positive charge from Mother Nature. This zeta potential is easily verifiable and indisputable.

The way I calculate the amounts listed on the JFDA Report, people allowed no more than 2 mg per day could not eat more than one thin slice (cut off the end) of a banana each day. People allowed 4 mg could eat no more than a small potato each day. And what about salads? Review the list again and make your own decision. Apparently, plant derived aluminum is not harmful, don't you think?

I had the opportunity to speak to many people while participating in a National Health Foods show in Anaheim, California in early 1995. I directed a simple question to more than forty people on an individual basis. Several had Ph.D.'s in food chemistry, at least eight of them were certified nutritionists, two were medical doctors, four were chiropractors and the balance were health food store owners. My question to each was "would you eat food if you knew it contained aluminum, arsenic, lead or nickel?" Without hesitation each person replied "absolutely not!" I was shocked to learn that so many supposedly well-schooled nutritional people were unaware that these minerals can be found in nearly all the foods we eat. To prove my point we contracted a well-known reputable laboratory to perform a spectrographic test for total mineral content on several well-known foods. The lab purchased these food items from a Midwest supermarket. The test results are listed below.

**Broccoli**

Aluminum  
 Boron  
 Calcium  
 Chlorine  
 Copper  
 Iron  
 Magnesium  
 Manganese  
 Nickel  
 Phosphorus  
 Potassium  
 Silicon  
 Sodium  
 Strontium  
 Sulfur  
 Titanium  
 Zinc

**Grapes**

Aluminum  
 Barium  
 Boron  
 Calcium  
 Chlorine  
 Chromium  
 Copper  
 Iron  
 Lithium  
 Magnesium  
 Manganese  
 Nickel  
 Phosphorus  
 Potassium  
 Rubidium  
 Silicon  
 Sodium  
 Strontium  
 Sulfur  
 Titanium  
 Zinc

**Almonds**

Aluminum  
 Barium  
 Boron  
 Calcium  
 Chlorine  
 Chromium  
 Copper  
 Fluorine  
 Iron  
 Magnesium  
 Manganese  
 Nickel  
 Phosphorus  
 Potassium  
 Rubidium  
 Silicon  
 Strontium  
 Sulfur  
 Titanium  
 Zinc

**Apples**

Aluminum  
 Arsenic  
 Barium  
 Boron  
 Calcium  
 Chlorine  
 Copper  
 Fluorine  
 Iron  
 Lead  
 Magnesium  
 Manganese  
 Nickel  
 Phosphorus  
 Silicon  
 Sodium  
 Sulfur  
 Titanium  
 Vanadium  
 Zinc

**Carrots**

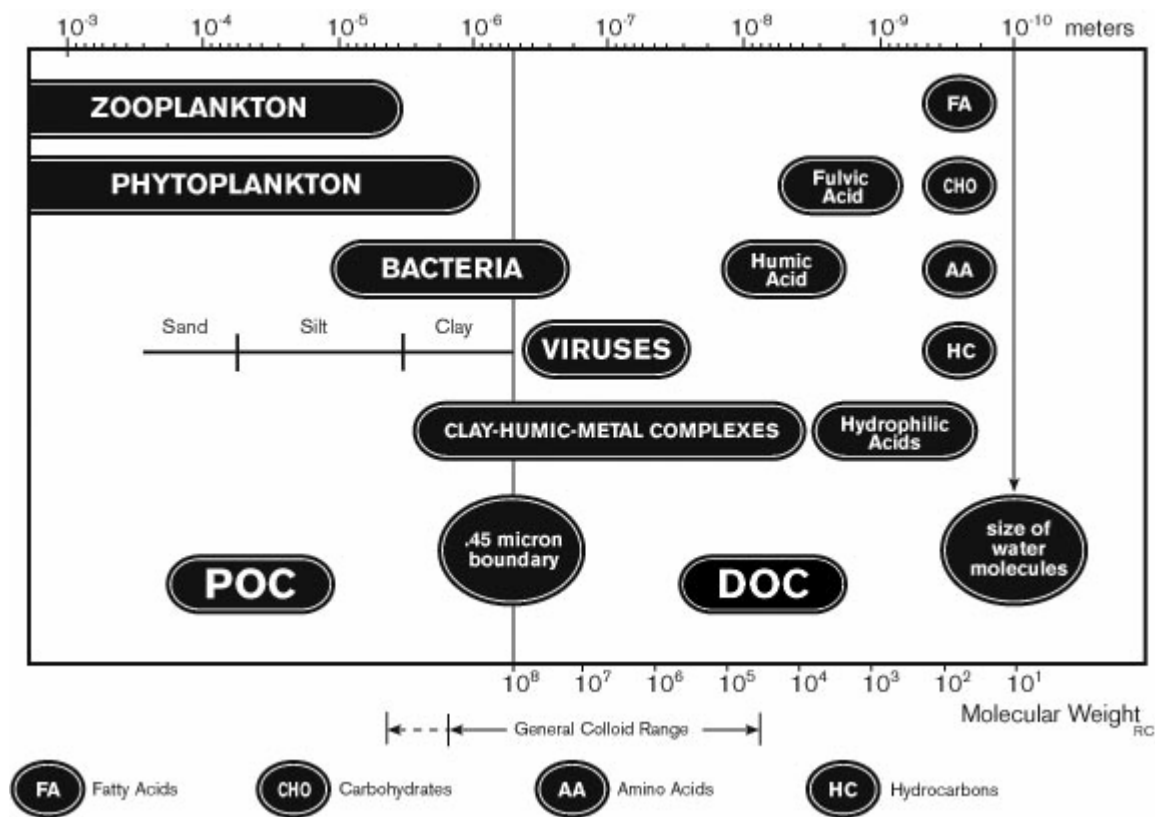
Aluminum  
 Barium  
 Boron  
 Bromine  
 Calcium  
 Chlorine  
 Copper  
 Fluorine  
 Iron  
 Lithium  
 Magnesium  
 Manganese  
 Nickel  
 Potassium  
 Phosphorus  
 Rubidium  
 Silicon  
 Sodium  
 Strontium  
 Sulfur  
 Titanium  
 Zinc

**Tomatoes**

Arsenic  
 barium  
 Boron  
 Bromine  
 Calcium  
 Chlorine  
 Copper  
 Iron  
 Lithium  
 Magnesium  
 Manganese  
 Nickel  
 Phosphorus  
 Potassium  
 Selenium  
 Silicon  
 Strontium  
 Sulfur  
 Titanium  
 Zinc

Nearly all plants contain aluminum, and if your mineral supplement contains little or no aluminum, it is not plant derived. If it is not plant derived, it is also not negatively charged. Therefore, it probably is not very well assimilated or absorbed. According to food chemistry, plant derived minerals are 100% absorbable. If this is true, comparing any metallic mineral to a plant-derived mineral would be like comparing sawdust to oatmeal. Pure plant derived minerals are the result of plants converting hydrophobic metallic minerals to hydrophilic (water soluble) minerals through the root system by a process known to science as assimilation through plant synthesis. By this process the metallic mineral is assimilated or digested by the plant, therefore it can be more easily assimilated by the human body. This natural process basically side steps the normal digestive time of about 15 hours as required for the small amount of metallic minerals actually utilized.

Plant minerals like those obtained from tomatoes, broccoli, potatoes, oranges or any other food grown from the earth are different than metallic minerals. Their size and molecular weight is much smaller than metallic minerals and in most cases the plant minerals are attached to an additional molecule even though they possess the same name. I predict that the scientific community will change the name of plant minerals in the future. I believe this will occur after they eventually realize plant minerals are composed differently and function differently than metal elements. Our minerals were particle sized by Dr. Ranville of the Colorado School of Mines. Please review the logarithm scale on the following page. Dr. Ranville supplied this to us.

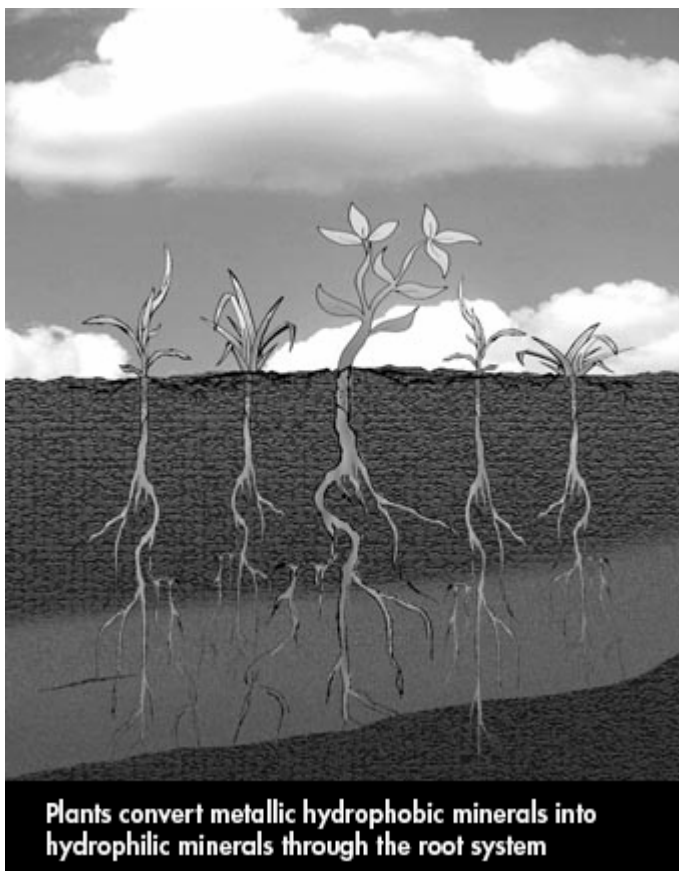


Basically, the scale reveals that clay, silt and hydrophobic metallic minerals, on average, are considerably larger than hydrophilic acids or hydrophilic plant minerals. The figures at the top from left to right are measurements in microns. As an example,  $10^{-4}$  is 10 times smaller than  $10^{-3}$ , and  $10^{-9}$  is 10 times smaller than  $10^{-8}$ , etc. The exponents of 10 clearly indicate that bacteria, viruses, clay and humic metal complexes are considerably larger than hydrophilic complexes such as hydrophilic plant derived minerals. Pure plant minerals can be pumped through a pharmaceutical grade, .01-micron (absolute) filter. Most metallic minerals will not pass through this small membrane. Only the water passes through. As indicated, a water molecule is only slightly smaller than hydrophilic complexes. The small size and water solubility is one of the reasons so many nutritionists believe plant minerals are much easier to assimilate or absorb than metallic minerals. The small size of a plant mineral gives it much more surface area. Therefore, the Hydrochloric Acid in the stomach comes in contact with considerably more surface area allowing for much more and possibly 100% assimilation. The bottom portion of the scale relates to the weight of the particle, which is measured in atomic mass units or AMUs or Daltons. A Dalton is a measurement of molecules and atoms. When reviewing the scale it is plain to see that the molecular weight of hydrophilics is considerably less than metallic complexes. In short, this clearly indicates there is as much difference in, generally known, "colloidal minerals" and "plant derived minerals" as day and night. When you study the organic carbon continuum (logarithm scale) it is easy to understand why water-soluble plant minerals are much more effective than metallic minerals.

In addition to being water-soluble, plant derived mineral extracts that have been predigested by the plant are naturally acidic. This alone makes important elements like calcium and iron more easily absorbable. As revealed in the preceding logarithm scale, a plant mineral is as much as several thousand, and with some, at least a hundred thousand, and others as much as a million times smaller than the smallest metallic mineral. The average plant derived mineral is less than 0.00001 micron in size that could conceivably be 1/10,000th the size of a red blood cell. Their small size gives them an enormous surface area. It has been calculated that the plant derived minerals in one ounce of Liquid Minerals would have a total surface area of approximately 55 acres of land. That's billions of tiny electrically charged minerals. And tests have proven that plant derived Minerals have a natural negative zeta potential or natural negative electrical charge.

All plants, fruits and vegetables contain converted or assimilated metallic minerals, which become negatively charged through the plant's synthesizing process. In order for minerals to be quickly and properly absorbed through the intestinal membrane, they must be negatively charged. When you eat plants or a plant's fruit you are eating plant derived minerals in an already combined and electrochemically neutralized form.

These negatively charged water-soluble minerals from plants are non-toxic in reasonable dosage. For example, iodine in plant-derived form is one of the elements for good health. And this is really interesting; if you drank even 2 grains of free iodine, it would kill you. But in its plant derived form, iodine is not only harmless, it is beneficial. The same is true for plant derived arsenic, lead, aluminum and other minerals considered toxic in their metallic form. Therefore, I believe it is appropriate to include as much information as possible in this book.



According to science, the surface of the earth has changed significantly since its inception. One of these changes apparently occurred approximately 70 million years ago in an area of the United States that is now known as Emery County, Utah. Supposedly, a glacier or other causes of earth movement buried a large quantity of vegetative matter that may have been a dense growth or a washed in bog of numerous plants that, according to Scientists, accumulated more than 70 million years ago. Generally, shale produces OIL for petroleum in the eyes of geologists and that thought prevails with the TGA in Australia and other Federal Food regulators around the world. The Humic Shale description was given to us in 1983 and we wrongfully carried on this name since that time.

After careful study of ancient history we found that the period between 70 million and 90 million years ago is referred to as "The Senonian Period". The compost in our Mine accumulated during that period so therefore our trademarked name,

Senonian Compost™. "Basically, this humic matter is a prehistoric deposit of plants which was or still is under great pressure from the earth. All of the moisture has been compressed out of the Senonian Compost and what remains is nothing more than prehistoric plant derivatives."

According to scientists, this vegetate was formed when earth's fertile, mineral-rich soils produced lush green forests and wholesome, succulent, wild fruits and vegetables. This was the era when the soils near the earth's crust contained at least 84 minerals. The numerous mineral elements available at the time may explain why the plant eating Brontosaurus reached a body weight of 70,000 pounds, yet had a mouth no larger than a horse.