Managing the Life on this Planet From the Ground Up – Part 2

Summary

Continuing directly from Article 68, this second installment goes underground — literally — to the soil itself, and what happens when it's managed well or badly.

- Soil health and humus identified as the foundational link in the food chain.
- Two named early-20th-century agricultural scientists cited in support of the claim that naturally fertile, humus-rich soil produces disease-resistant crops and livestock without chemical intervention.
- A contrast with modern agribusiness's reliance on synthetic fertilizers and pesticides.
- That reliance described as a self-perpetuating cycle of ecological and nutritional decline, masking rather than solving the underlying soil depletion it creates.

The full article begins on the next page.

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"In the beginning was the spoken word, and the words were from Yahweh, and the words were Yahweh's. It was in the beginning from Yahweh. All things were made through Yahweh's word, and without it nothing was made that was made. In Yahweh's word was life, and the life was the light of men" *(John 1:1-4).*

"LIGHT" is the key to life! In the physical, as well as in the spiritual sense. There is a duality to almost all Biblical revelation. The opening verses of the book of John are a perfect example of Biblical duality. In them it is revealed that Yahweh - by His Word, provides us with spiritual "light", to guide us in our understanding of the mysteries of the "Kingdom of Yahweh", and these verses also reveal that physical "light" is the source of "life", in the physical sense.

We are instructed in many places in the Bible, that our physical life is an image of the spiritual life to come. In Hebrews 8:4, when speaking of the physical as compared to the spiritual, we are instructed that the physical is merely "a copy and shadow of the heavenly things".

We are to use our experiences in this "physical" life, coupled with our Yahweh-given instructions in righteousness - to build the righteous, holy character, required for us to be worthy of being called one of the "children of Yahweh", in Yahweh's future "spiritual" Kingdom.

How are we to do this? Ironically, one of the very first instructions given to us by Yahweh, reveals that we were to do this by becoming successful "farmers"! Yahweh took the man *(Adam),* and placed him in the garden to "tend and keep it" *(Gen. 2:15).*

In other words, our physical life, is meant to be a study of our physical environment - the environment that we are to "tend and keep" in order to produce the food required for our very survival. *(For the "trendy" reader, who may not find it appealing to be labelled as a "farmer", you might say that Yahweh instructed us to be "food producing environmentalists"!)*

Yahweh gave us our physical environment, that we might have a simple and obvious need *(our very survival)* to learn an awareness of, and an obedience to its physical laws. This physical learning process is to be an example, or a "copy and shadow" of the spiritual learning process that we also need to undergo, in order to learn an awareness of, as well as an obedience to Yahweh's spiritual laws, prior to entering His Kingdom.

Yahweh commanded us to manage our environment, and to "replenish the earth" *(Gen. 1:28),* and to have dominion over every living thing that moves upon it! That has been man's responsibility from the beginning. In fact, this environmental management IS OUR LIFE, because it reveals the way we relate to Yahweh and to His physical laws in every area of our human existence! These are physical laws and responsibilities, but they will not be correctly executed by man without spiritual understanding. That spiritual understanding must exist, not just among farmers, but with all humanity and in every generation - if you hope to be in Yahweh's Kingdom!

As a farmer *(sorry - "environmentalist"),* we must first recognize that our survival is totally DEPENDENT ON OUR PHYSICAL ENVIRONMENT. Further, we must recognize that ALL LIFE that exists in our physical environment is totally DEPENDENT ON LIGHT. It becomes obvious, that the vital link in our food chain that is responsible for converting this light into food energy is "soil"! That is why we were first instructed to "tend and keep" the garden - the earth - our environment!

Healthy soil is the most vital link in the food chain. Yet, soil mismanagement has long been one of man's most fundamental abuses of the environment! We have long since forgotten the importance of our soil in converting the vital light-energy into life-giving food products. This is Yahweh's way of "testing" us in this temporary "physical" life, prior to granting us eternal life in His Kingdom. "All things" physical can be replaced and will be replaced, once Yahweh has finished "proving" the human race on this earth - "And I saw a new heaven and a new earth, for the first heaven and the first earth had passed away" *(Rev. 21:1).*

When we speak of our environment, we often refer to what we call the food chain. Our society also has a saying: "a chain is as strong as its weakest link". What then are the links of the food chain and which is the weakest link?

The links are the various parts of the environment involved in human nutrition and therefore human survival. There is only one weak link and that weak link is man! That is why there is only one link being "tested" by Yahweh! MAN IS THE WEAK LINK, because man is the only element of the living physical environment with free moral agency - the freedom to choose his own course of action!

This requires by its very design, that man develops and exercises character in the choices he makes! It allows us to lean to our own understanding, but does not force us to. It offers us the option of following Yahweh's freely given instructions, but again does not force them upon us.

Man, then, by his very nature, is the weakest link. And man, has historically been responsible for managing our environment - from the ground up! This ground, or soil, is the MOST VITAL LINK; it is the key to converting "light" into "life"! So the decisions made by the weakest link - man - have the greatest impact on the most vital and sensitive link - the soil!

Think of soil as the foundation of life. It comes mainly from eroded rocks, and from humus from the return of dead organic matter, which is broken down by various soil macro and micro-organisms, which in

turn support oxygen-giving plants, which support animals, both of which support man - who tends the soil.

Man's abusive soil management decisions have been critical, because they have produced domino effects on all species in the environmental and food chain links - from the ground up! This is why the condition and management of our food-producing soil is so fundamental. Ultimately, it is our health and survival that are being managed - or "mis" managed!

Our health is currently being undermined by agri-business concerns, who, for the sake of money *(dead trees with ink on them),* purport that huge applications of chemical fertilizers and great varieties of chemical pesticides are the answer to our "survival"! Many will agree with these industrial concerns, simply because they have access to more food than in times past.

But this helps to prove, rather than disprove the point, if we consider what nutritional value is in the food.

In almost every group of shops today, at least in the English speaking world, we find one displaying the sign, "health food". Does it ever occur to us that we never see the sign that says, "unhealthy food"? However, people are now slowly coming to suspect that every food shop and supermarket sells what to some extent, should be labelled as "unhealthy food".

If you consider that to be an exaggeration, just stop and ask yourself: What are the main products sold in "health food" stores and why? You know very well their main products are vitamins, minerals and other nutritional supplements. In the last 20 to 30 years they have become a multi-billion dollar industry. Why? What are they supplementing? Shocking as it may sound, they exist to supplement the vitamins, minerals and other nutrients found ONLY NOW to be missing in the food we buy in the shops next door!

Why? Partly because of processed foods, but mainly because the plants and animals from which the food is derived, are themselves deficient. Why are the plants and animals deficient? Partly because many of them have been genetically manipulated (a topic which deserves a chapter unto itself), but mainly because the soil on which they were raised did not adequately supply their nutritional needs.

Why does the soil no longer provide these nutritional needs? Because of man's arrogant abuse of the soil! Wrong farming methods *(poor environmental management),* has reduced the soil's ability to supply proper plant nutrition. Loss of soil fertility has resulted in lower yields and increased plant diseases. Soil fertility can easily be replenished naturally, using Biblical principles of crop rotation - alternating cereals, legumes, and others, together with grazing and fallow (rest) practices. However, this natural process, is time-consuming and in consideration of large, industrial-scale farming operations, not entirely economically viable.

For these agro-chemical based companies, the solution has been obvious - apply artificial chemical fertilizers and pesticide controls! The "quick-fix"! These artificial means do perform. The "farmer" can see it before his very eyes. They dramatically increase his yields, especially on soil that has been badly depleted.

What they don't see, is that the two or three nutrient components of the fertilizer chemicals added (that appear to cause the increased yield), do not include allowances for the other three or four dozen trace elements, concurrently deficient in that same soil! This results in food that "appears" to be bigger and better, but in reality, it is in itself, deficient in many elements vital to our own complete and balanced nutrition!

The truth is, only nature itself, is capable of fully maintaining its proper balance. Many, especially those with vested interests, hotly deny this and will continue to do so. What they cannot truthfully deny, is the huge increase in nutritional deficiency diseases in plants, animals AND MAN! Neither can they truthfully deny the rapid expansion in the western world of feeding protein and mineral supplements to farm animals and sales of vitamins, minerals and other supplements to humans! Nor can they truthfully deny the fact that these trends have taken place in precise proportion to, and in perfect coincidental timing with the increased usage of chemical fertilizers and pesticides!

This is simply another costly example of treating the effects rather than the cause! Small wonder that many of these large agri-businesses are controlled by the same interests that own the fertilizer, pesticide and strangely enough, even many of the vitamin, mineral and nutritional supplement manufacturers! Seeing that "money" is their sole motive, they have succeeded in manipulating our food production, processing and distribution networks in such a manner that they "reap" from every angle!

"World on edge of food crisis", was the headline for an article appearing in the January 17th, 1994 issue of "The Australian". Despite the efforts of our industrial food producing giants, many experts agree that we cannot continue to expect our soils to feed our ever-growing population without major changes in farming methods.

Here are just a few simple thoughts based on Biblical principles, that many of these same experts agree, will one day be absolutely necessary for our survival. We'll start with humus.

Good structure and high fertility of soil always depend on regular and adequate return of organic residues. This is the principle that has been producing the forests of the world for thousands of years - and it is the same principle that must apply to food production.

In humus, Yahweh has provided a nutritional storehouse within the soil, upon which plants may draw throughout successive generations of crop production. It is the most important of all substances contributing to the fertility of the soil. If it is allowed to become exhausted, the soil will be ruined as a natural medium for plant growth.

Humus; dead organic matter, is a first and vital step in the soil's cycle of life. Earthworms, bacteria and a host of other soil organisms are constantly waiting to spring instantly onto the stage of life. They are ever-ready to jump in and fill any ecological gap in the soil's health, if only man will temporarily remove his grasping hand and FEED THEM!

Soil texture is rapidly improved by these agents of organic decomposition. Water no longer hurries past on the quick journey to the sea. Soil which was impervious becomes porous, while that which was all too porous and prone to leaching, becomes more absorbent. New-found moisture retention ushers in multiple benefits for the wise food producer, making more efficient use of available rain.

Humus-rich soil provides a tremendous breeding ground for multiple life forms. Few of us have any consciousness of the activity beneath our feet, through multiple forms of macro-organisms - earthworms, eelworms, centipedes, millipedes, springtails, spiders, mites, and many other insects, as well as micro-organisms - bacteria, fungi, actinomycetes, algae, and protozoa.

These life-forms are incredible fertilizer "factories". The humble earthworm for example, contributes as nature's aeration expert, with its ceaseless tunnelling within the soil and the resulting annual top-dressing of castings which can range up to 20 tons per acre!

Man on the other hand, really thinks he is accomplishing something when he adds a measly 200 to 500 pounds of fertilizer per acre, usually comprised of roughly equal amounts of nitrate, phosphorous and potassium. This man-made fertilizer is extremely expensive, and not readily available for plant consumption until first exposed to the elements for varying periods of time.

Earthworm castings on the other hand, contain abundant, FREE and readily available plant nutrients! When compared to the surrounding soil, they are over 5 times as rich in nitrogen, 2 times in exchangeable calcium, 3 times in exchangeable magnesium, 7 times in available phosphorous and 11 times in exchangeable potassium, as well as many times richer in a host of other trace elements!

A difficult aspect of the study of soil micro-biology is mentally adjusting to the size and number of organisms concerned. One gram of soil can contain as many as one thousand million bacteria, plus a kilometre of fungal hyphae *(thread),* as well as many hundreds of thousands of protozoa and algae! These soil life-forms occupy relatively little of total soil space, yet proportionately speaking, they affect large areas around them. Studied microbiologists say of them, that it is as if a tree could affect all other plants growing within a kilometre of itself!

Selman Waxman, one of the world's foremost microbiologists, stated: "The importance of humus in the human economy seldom receives sufficient emphasis. Suffice it to say that it probably represents the most important source of wealth on this planet"!

Sir Albert Howard (knighted for his work on organic agriculture), wrote: "Nature *[Yahweh]* has provided a marvellous piece of machinery of conferring disease-resistance on the crop. This machinery is only active in soil rich in humus; it is inactive or absent in infertile land and in similar *[humus-rich]* soils fertilized with chemicals"!

Elsewhere, he wrote: "I have several times seen my cattle rubbing noses with foot-and-mouth cases. Nothing happened. The healthy, well-fed animals *[on diets grown on NATURALLY FERTILE AND*

HUMUS-RICH SOIL] reacted to this disease exactly as suitable varieties of crops, when properly grown, did to insect and fungus pests - no infection took place. Nothing was done in the way of prevention beyond good farming methods and the building up of a fertile soil"!

THE SOIL'S LIVING ORGANIC CONTENT, DEPENDENT ON MAN'S FARMING PRACTICES, IS A VITAL KEY TO THE SUCCESSFUL MANAGEMENT OF OUR ENVIRONMENT. Unfortunately, modern farming practices are killing ALL SOIL LIFE, thereby destroying - from the ground up, the very environment upon which we owe our total dependence!

For years, farmers the world over, BURNED off all of the crop "residue", after harvesting, calling it an inconvenient "waste"! This practice literally starved the soil organisms to death! They then further depleted the soil life by poisoning it with chemical fertilizers. This prompted tremendous imbalances in the natural order of soil life, resulting in harmful but otherwise scarce soil "pests" *(rare fungus, bacteria and insect varieties)* taking over, and diminishing yields. Of course, chemical pesticides were brought in to "save" us from this man-made disaster.

It's as if each time man creates a "problem", instead of falling back on Yahweh's principles of environmental management, he creates a "band-aid" solution, which turns out to be the next "problem", and so on, and so on! Admittedly, it has taken man a long time to come anywhere close to understanding even basic environmental practices outlined in the Bible. Some of the reasons behind Yahweh's instructions, we concede, may never be within our limited human understanding! But we are still meant to OBEY them!

Yahweh gave us the forests as an example of perpetual, self-sustained growth, to use for our farming methods. They obviously worked - even though He did not tell us WHY they worked! We have learned at least something about two obvious reasons why they work - one is that a great variety of plants and animals co-exist, providing a variety of naturally recycled decaying matter for active soil life. And two is, that somehow this varietal co-existence maintains a natural balance of defence against disease.

Yahweh also gave us instructions on grazing certain animals, requiring by its nature, the rotating of land out of crop production. Animal grazing also contributes animal droppings - a rich source of nitrates and other valuable food for soil life.

Again, experience has "proven" that the practice of periodically grazing crop land will increase its productivity - if the farmer can afford the transition.

Yahweh also gave us instructions on letting land "rest", or leaving it fallow. He designated each seventh year as "a Sabbath of solemn rest for the land" *(Lev. 25:2-7)*, and in Lev. 25:8 through 17, He further instructs us that in addition to the seventh year land Sabbaths, a Jubilee will occur each 50 years, in which the land is also left fallow.

Ask any prairie farmer, and he will quickly confirm that periodically leaving land fallow, is probably the single greatest factor contributing to the high productivity in our North American grain belt region.

This chapter only deals with a small aspect of the fragile balance of soil life. There is a certain "scientific" logic behind every aspect of our environment. There is also a certain Yahweh-given logic behind each of Yahweh's farming instructions! Yahweh has not forced us to follow His methods - He gave us our free will to choose. Unfortunately, we have stubbornly chosen to pursue the scientific approach, and to "do it our way", in almost every instance, until we were finally, and usually out of desperation, driven to acceptance of His ways.

Ironically, science has turned out to be our biggest obstacle to real progress! It has literally "blinded" us to the guiding "light" offered only in the pages of the Bible. Man has been so pre-occupied with finding out "why" things are the way they are, that he has forgotten to OBEY the simple and practical instructions given to him by Yahweh!

In his arrogance man has completely lost sight of the purpose of this life - it is, whether we like it or not, a life designed by Yahweh, for Yahweh's purpose - not ours! Yahweh merely wishes to establish which of us will humble ourselves to the point of being OBEDIENT TO HIS LAWS IN THIS LIFE - WHETHER WE KNOW "WHY" THEY WORK, OR NOT!

With respect to our Yahweh-given opportunity to learn obedience to His spiritual ways, through practical application of our experience with the physical laws of our environment, it is safe to say, the majority of humans have failed miserably - from the ground up!

The soil that Yahweh gave us to "tend and to keep", is in many cases dying, or already dead! "And they took of the fruit of the land in their hands, and brought it down unto us, and brought us word again, and said, `It is a good land which Yahweh our God doth give us'" *(Deut. 1:25).*

Yes, it WAS "a good land which Yahweh our God gave us" - but that was ancient Israel 3,400 years ago! It's not true of the land of Palestine today! Neither is it generally true of most of the food producing regions of the rest of our planet today! If it were, we would not be reading headlines such as the earlier quoted, "WORLD ON THE EDGE OF FOOD CRISIS"!

Historically, in nomadic and semi-nomadic agriculture, this process went on to the point of soil exhaustion. Modern intensive methods differ only in one basic point - modern science has made it possible to artificially extend high levels of productivity well beyond the point of actual soil exhaustion! The nomads ended up with visible deserts. Science ends up with invisible deserts; something approaching hydroponics and nutritional chaos!

We want to call ourselves "environmentalists", and we pretend to be environmentally conscious, but the reality is, because of our spiritual "blindness", we haven't even come close to being good "farmers"!

The "dead" soil we have created, is no longer capable of converting the Yahweh-given light-energy into nutritionally balanced, life-giving food products! We are living in what the Bible calls a man-made "famine", and most of us don't want to admit it, while many don't even know it!

We (man) are the weak link! Yahweh has put us to the test, and sadly, as individuals, as nations, and on a global basis, we have failed Him! Israelite logic dictates that it is high time that we exercise our Yahweh-given ability to choose; that we choose to accept the very life-saving words in our Bible, that proclaim: "In Him was light *[spiritual guidance]* and the LIGHT WAS THE LIFE OF MEN"!

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