
Pro Rege

Volume 6 | Number 4


Article 3

June 1978

Is "Natural" Better?

Russell W. Maatman
Dordt College

Follow this and additional works at: http://digitalcollections.dordt.edu/pro_rege

 Part of the [Christianity Commons](#), [Higher Education Commons](#), and the [Natural Products Chemistry and Pharmacognosy Commons](#)

Recommended Citation

Maatman, Russell W. (1978) "Is "Natural" Better?," *Pro Rege*: Vol. 6: No. 4, 9 - 15.
Available at: http://digitalcollections.dordt.edu/pro_rege/vol6/iss4/3

This Feature Article is brought to you for free and open access by the College Publications at Digital Collections @ Dordt. It has been accepted for inclusion in Pro Rege by an authorized administrator of Digital Collections @ Dordt. For more information, please contact ingrid.mulder@dordt.edu.



A quarterly faculty publication of
Dordt College, Sioux Center, Iowa

Is "Natural" Better?

by Russell Maatman
Professor of Chemistry



Dr. Russell Maatman received his Ph.D. in Chemistry from Michigan State University. Prior to joining the Dordt faculty in 1963, Dr. Maatman taught at the University of Mississippi. He also taught at De Pauw University and has been a research chemist for the Mobil Oil Company. He is the author of two books and several technical and non-technical articles.

A Navajo Indian is ill. His family brings in the medicine man. The medicine man decides, since the patient is very ill, that all available means must be used to heal him. First, he uses chants to invoke a power which the patient believes in, and then he makes sand paintings. The medicine man identifies that power and explains that birth, life, and death are part of a universal pattern, and that, in death, man returns to the blissful harmony of nature. Finally, the medicine man makes ritual

offerings. The entire process serves to bring everything—the patient, his illness, and his environment—into harmony with nature. According to Navajo teaching, the individual is not merely united to the ultimate harmony. He *is* the ultimate harmony.

Beth Witrogen recently described these Navajo practices approvingly, because for her they constitute one more proof that natural things are better than unnatural things, that is, those things which are

synthetic.¹ Witrogen was especially interested in the natural vs. synthetic food question. In her article "How Folk Healers Tune Patients in to Nature's Harmony," she says that the natural approach of the Navajo teaches us that many modern foods are "out of tune with nature and man's long heritage of eating nature's foods."

Why are ideas like Witrogen's so common? We don't need to ask here why these ideas are part of the Navajo culture. But why are these ideas found in books and articles in magazines like the one cited? In other words, how have these ideas become part of Western culture?

An Ancient Idea

The Greeks believed that nature carries out a plan that is possible because the world is a living organism.² If nature can carry out a plan, what can man do? Man cannot, of course, make life, went the argument, and therefore the art of man (the work of the artificer) can only be a shadow of nature's art. According to Aristotle, human art either imitates nature or brings along further what nature starts. Philosophers said that it is wrong to compete with nature, and such views were widely accepted. (Cicero, for example, said that no man can do as well as nature.)

As late as the Middle Ages, men accepted these ideas, and many held them even in the early part of the modern era. In 1600, William Gilbert, an English physicist, commented that one degrades the world if he asserts that it has no soul. After all, said some people, the earth brings forth living beings and, therefore, the earth itself must be alive.

The Aristotelians of the Middle Ages held that the compounds which man can make—they called them substances—are only mock compounds. Only nature can make true compounds. The person who attempted to imitate nature was believed to be crafty. The very words *mechane* and *machina* referred not only to any instrument, but also to craftiness. The person using such an instrument tried to subdue

nature. Some people believed that one could indeed subdue nature and, to the extent that he succeeded, he was actually dealing in magic. In fact, any success that the alchemists had was attributed to magic. But even in those days, men thought that one could legitimately *help* nature.

These ideas might have been poetic or romantic, but they were certainly not very helpful in coping with the physical problems of life. Plagues could wipe out the greater parts of populations, and often even without a plague only one child in a family of ten would reach adulthood.

But a change was coming. The scientific experiment was born, although even then *experimentum* referred to both scientific experiment and witchcraft. One of the most prominent among those who urged abandoning the old ideas was Francis Bacon, who lived from 1561 to 1626. His work was so important that R. Hooykaas has been able to make a good case for the idea that Bacon's ideas were an integral part of the Reformation.

What did Bacon and his followers do and say? They de-deified nature, that is, they developed a mechanistic world picture. They taught that man should not treat nature as if it were divine. Rather, man must accept what the Bible says: God created the world and, therefore, only the Creator, not the creature, is divine. Bacon maintained that there are two sources of theological error, one the tendency to ignore the will of God as revealed in the Bible and the other the tendency to ignore the power of God as exhibited in nature. When the Bible conferred on man dominion over nature, man acquired the *duty* to carry out the scientific enterprise. Any denigration of man's position, the position which requires him to work in creation, is therefore an insult to God.

The modern scientific enterprise was well under way at the beginning of the nineteenth century just because many men had perceived that the old Greek ideas were wrong. But these old ideas were dying hard. Wordsworth in "The Tables Turned" (written in 1798) reflected what

many still believed:

One impulse from a vernal wood
May teach you more of man
Of moral evil and of good
Than all the sages can.

Sweet is the lore which nature
brings;
Our meddling intellect
Misshapes the beauteous forms
of things—
We murder to dissect.

Enough of Science and of Art;
Close up those barren leaves;
Come forth, and bring with you a
heart

That watches and receives.

Many scientists of that period seemed to think that "Enough of Science and of Art" was a suitable motto when it came to the question of investigating *some* parts of the physical world. When they looked at *those* parts, they thought that man had a meddling intellect. For part of the physical world, at least, Wordsworth's impulse from a vernal wood could teach them more than dissection (that is, analysis) could.

Consequently, chemists usually held that there was something inherently different about an "organic" compound, that is, a compound produced by a living thing. A "vital force" available only in living cells was said to be necessary for the synthesis of an organic compound. But in 1824, Wohler prepared oxalic acid in the laboratory from cyanogen, and in 1828 he made urea from ammonium cyanate. Oxalic acid is also produced by some plants, and urea is a component of urine. His experiments proved that organic substances could be prepared from compounds which were indisputably inorganic. Organic chemistry was born. By 1850, chemists generally understood that the one necessary constituent of organic compounds is the element carbon. There was less talk of a vital force.

But the mystery that had been associated with organic compounds made by organisms seemed to be transferred to

carbon compounds, some of which were made only in the laboratory. For example, chemists observed that many carbon-containing compounds, such as ordinary sugar, possessed "optical activity," that is, they caused plane polarized light to rotate. In the early years of the twentieth century, Alfred Werner affirmed that optical activity arises because of the presence of a certain geometric arrangement of atoms, not because of the presence of carbon. But some were unconvinced. Every compound that Werner used to prove his point, whether it was made in the laboratory or by an organism, contained carbon. Therefore, said many chemists, carbon, for some unknown and perhaps mysterious reason, is responsible for optical activity. But Werner finally won his point in 1914. He prepared an optically active compound that met the geometric requirements but contained only the elements cobalt, nitrogen, hydrogen, and oxygen. Carbon was not needed, and there was no mystery.

The Ancient Idea Lingers

Many people still believe that natural things are inherently different from and better than those that are not natural. They accept an idea that can be traced back to the ancient Greek concept of a divine world. Rarely, if ever, do modern natural scientists accept the idea, however. Evidence that the natural-is-better idea still persists in the minds of a large number of people is the wide interest in natural food. Sentiments like those recently expressed by a minister in the article "Natural Food is Part of God's Plan" are common:

If the Almighty wanted man to eat processed foods, then Adam would have munched on a bowl of sugar cornflakes instead of an apple, John the Baptist would have been better off with a butter-nut crunch bar instead of wild honey, and Moses would have requested manna made from bleached flour.³

(One is tempted to point out, even though

the fact is not related to the present discussion, that there have been several unpleasant results of Adam's eating a certain fruit that was indisputably natural.)

In the same spirit, a pro-natural-food magazine published an article ("It Takes Brains to Eat Like an Animal") indicating that dumb animals are smarter than some people because animals know how to choose non-poisonous food. After all, do we not expect "natural" animals to choose the best "natural" food?⁴ Another author put Nature (note the capital letter) on a pedestal in a different way:

We are witnessing a great plague of degenerative disease, which is caused by malnutrition. . . We have abandoned science, which in final analysis is knowledge of Nature's ways. . . We must, if we are going to save mankind find a different answer.

There is an answer, but it is too "unscientific" for scientists to accept. That answer is to go back to Nature's ways. For a million years or more mankind fed itself by merely gathering and consuming the foods which Nature provided. The human species thrived, and did not die out because their foods were not "scientifically" raised.

This author, who apparently had no problem with "a million years or more," repeatedly refers to Nature's laws, Nature's precepts, and Nature's ways. Finally,

Healthy people do not need medicine, and by farming according to natural methods we can produce enough food to sustain earth's populations in good health.⁵

Often the natural-is-better idea implies that "chemicals" are bad. The following quotation, to which its author gave the heading, "Natural is Better," is an example:

Modern conditions of living have made supplementation of the diet a necessity. Yet the very idea of swallowing chemicals manufac-

tured in a laboratory as dietary supplements is abhorrent. Such products may seem to the chemist to be identical twins to nature's own nutrients. But their biological activity is different from that of nature's products. . .⁶

These ideas are not quite as extreme as those held by some early Greeks, but the connection seems to exist. Hooykaas says this of the Greeks:

The artificial was considered inferior to the natural, even from a moral point of view. This was emphasized in stories about the Golden Age, when man still lived soberly and, as Seneca would have it, without architects, carpenters, and weavers, or, as Lucretius thought, even without agriculture, and when everybody was healthy and contented.⁷

A modern author has said that

Whether you're going to apply something to your diet or to your skin, you're always better off with something from nature's bag. At least you'll be sure there's no chemical sleight of hand involved.⁸

For Seneca and Lucretius, life was best if man could avoid the artisans and go straight back to nature. Today, apparently, we must go back to nature by avoiding "swallowing chemicals" and "chemical sleight of hand."

Sometimes advocates of the natural-is-better idea are so eager to prove their point that they lead others to believe that certain processes occur only in living things, not in the laboratory. When reading the following quotation from "Discovery—What Chelation Could Mean To Natural Nutrition," remember that chelation is a well-understood process, studied extensively in chemical laboratories for many different chemical species, regardless of whether those species have any relation to living organisms:

Chelation is a process that takes

place in nature in many ways that are known, and probably a great many more that have not yet been explored. . . . Hemoglobin is a chelate. . . . [The elements of the hemoglobin molecule] are bonded together, not to be separated *until the molecule actually dies*. . . .⁹ (Italics added)

The article says many things about chelation and implies that chemists could learn little of this process without observing what occurs in living systems. Most of the article's factual statements about chelation bear no necessary relation to living things, and they offer information that the ordinary chemist possesses even if he knows nothing of the chemical reactions that occur in living systems. The author apparently assumed that his audience would be composed of non-chemists. To the non-chemist, his ideas sound far more impressive than they actually are.

The attitude of the ancient Greeks toward nature—like that of the Navajo—was maintained because of their religion. The modern natural-is-better idea is also often related to religious beliefs. For example, Aldous Huxley pictured a utopian future with an emphasis on nature and related his scenario to religion. The first lessons to be given to school children were lessons in ecology, and, Huxley added, "Elementary ecology leads straight to elementary Buddhism."¹⁰ Also in modern times, Christian missionaries in pagan lands sometimes find it necessary to cut down groves of trees whenever pagans believe that a spirit inhabits the trees.¹¹ Again, the modern association of natural things with religion occurs in articles like "Faith Healing Is Part of Good Medicine" published in a magazine devoted to the back-to-nature movement.¹²

A Word of Caution

We have been criticizing much of the natural-is-better attitude. But the reader should not attempt to find criticisms that are not present.

For example, frequently people who claim that natural food is better than synthetic food also quite properly maintain that "junk food" is bad. The problem arises when one assumes that all synthetic food is bad just because junk food, *one kind* of synthetic food, is either unhealthful or at best neutral. A problem also arises when people crusade against cooking food because heating can break down useful compounds. Some compounds do break down in that way, but one cannot conclude from the instability of these compounds that all heating of food is undesirable.

In the same way, many people condemn all refining of food. For example, white sugar and white flour have less nutritional value than these foods had before they were refined to make them white. Actually, however, a purifying treatment of foods is occasionally necessary, since some untreated foods, such as peanuts, can contain naturally-occurring toxic substances in concentrations too high to be tolerated. In all these instances—concerning synthesizing foods, cooking, and refining or purifying—one can give neither blanket approval nor blanket condemnation.

Finally, certain "natural" trends are obviously good. Hence, pollution of the environment should be curbed. Also, a person is healthier if he exercises his body than if he does not. But the validity of these attitudes or practices cannot logically be used to prove that only natural things are acceptable.

A Wrong Attitude

The natural-is-better attitude as usually expressed is wrong for two reasons. First, the mystical approach to nature is a false religion. We have already shown what forms this error has taken over the centuries. But there is another reason that the natural-is-better attitude is wrong. It is *a misunderstanding of what is actually found in the physical world*. At least three wrong ideas are current because of this misunderstanding.

First, the word "natural," when ap-

plied to the physical world, does not, contrary to popular belief, have a precise meaning when we consider the composition of a natural substance. If substance X is natural, we can sometimes find that its composition varies so much from place to place, or from time to time, that at one time X will be healthful and at another time it will be unhealthful. For example, consider the water fluoridation controversy. People oppose adding the fluoride ion to water if they believe that fluoridation causes water to be unnatural and harmful. But no matter which point of view one takes in the fluoridation controversy, he must assume that *one* of the following statements is true: water of a high fluoride content is harmful; or, water of a low fluoride content should be altered by adding fluoride before it is consumed. But high fluoride water and low fluoride water are both found in nature. In most places, there is very little fluoride ion in water; in other places, however, as in parts of Colorado, the fluoride ion concentration in natural water is very high.

A question can also be raised about the iodide ion concentration in natural water. Some natural water contains the iodide ion, but much natural water, such as that of the Midwest, does not. People who live in low-iodide areas normally supplement their diets with iodide-enriched salt because the thyroid gland must have iodide. These people have no alternative if all their food also comes from iodide-poor areas as, of course, it will if iodide is not deliberately added to the food.

Which water is natural—that with a low fluoride content, or a high? A low iodide content, or a high? Obviously, when one considers the composition of natural water, the word "natural" has no precise meaning. In some cases, treated water, with added iodide (added along with the salt used in cooking) or with added (or removed) fluoride is the best food. To say that natural water is the best water to drink is obviously not a precise and unambiguous statement.

Second, it is incorrect to assert that

a substance found in nature is not the same as its synthetic counterpart. Some people will say, however, that there is always *some* difference. No doubt many non-synthetic substances (for example, natural vitamins) contain minor impurities that have physiological importance, impurities not found in synthetic substances. But chemists are quite familiar with the occurrence of impurities in natural substances. Such occurrence is not mysterious. For example, many years ago benzene that was obtained from petroleum, a natural substance, was found to be slightly different from synthetic benzene. Eventually, the missing minor component in natural benzene, thiophene, was found and there was no mystery. One could then make either pure benzene or natural benzene in the laboratory.

Nitrogen gas obtained from the atmosphere was once slightly but inexplicably different from nitrogen made in the laboratory. Later, minor impurities, some of the noble gases, were found in atmospheric nitrogen, and the synthetic-non-synthetic difference was adequately accounted for. One could then make natural nitrogen. Again, the element zirconium as obtained from ores once contained an undetected minor impurity, hafnium. When the impurity hafnium was discovered, it became possible to prepare either pure or natural zirconium.

Obviously, these incidents in the history of chemistry prove only that occasionally there is a difference between the synthetic and the natural substance. There is no reason to suppose that such differences always exist, and least of all is there reason to believe that where there are such differences that the natural substance cannot eventually be synthesized.

Third, contrary to what many people say, natural foods can contain poisonous impurities, and other foods do not necessarily contain such impurities. Look at the evidence. Olives raised under completely natural conditions—no soil treatment, no sprays, nothing that could be construed to be artificial—contain benzopyrene, a poison.

A toxin is always found with carrots. Lima beans always contain a substance that releases deadly cyanide when they are cooked and later digested. Potatoes also contain a toxic substance. One might ask, then, why these foods are safe to eat. The answer is simple. To encounter difficulty, one would have to eat about ten times as much of those natural foods as is ordinarily eaten; that is, the "safety factor" is about ten.

But what happens when chemical fertilizers and sprays are used, and artificial substances are added to the foods? The authorities who make decisions concerning the public safety in such matters do not approve the use of chemical fertilizers, sprays, and food additives unless the safety factor is in the *hundreds*. Therefore, the amount of poison naturally present in some common foods is many times greater than the amount introduced artificially.

Anti-intellectualism

The natural-is-better idea is only one part of the anti-intellectual climate found in part of our society. Some anti-intellectual attitudes are not related to scientific activity. But the natural-is-better attitude is certainly an attack on the validity of scientific research. Some people seem to be saying, "I *know* that there is something mysterious about this food (or this tree, or the way birds know when to fly north, or the way a seed germinates) which scientists will *never* be able to understand." Such an attitude is probably not very different from that of the ancient Greeks.

Not surprisingly, the modern natural-is-better (or anti-intellectual) attitude also frequently scorns medical treatment:

Is your medicine cabinet clogged with drugstore productions like aspirin, digestive aids, laxatives, sleeping pills, and tranquilizers? Get rid of them all! Any of them can cause more illness than they treat.¹³

The authors do, however, advise medical care in extreme cases. Again, in the

article "Mind Over Cancer," in which it is stated that sometimes cancer can be cured by mental concentration, the author states that

Radiation is a savage weapon. But don't underestimate the power of the brain to slay the invader with silent thunderbolts of resistance.¹⁴

Here, too, medication is not completely ruled out. But the main thrust of the article is that there is something beyond medication, something inaccessible.

May the Christian adopt the mystical religious attitude of the Greeks in considering the physical world? May the Christian ignore what we now know about the physical world? Is it right to adopt an anti-intellectual attitude? To ask these questions is to answer them.

Footnotes

1. B. Witrogen, *Prevention*, August 1976, p. 140.
2. R. Hooykaas, *Religion and the Rise of Modern Science* (Eerdmans, Grand Rapids, 1972). Chapter 3, "Nature and Art," is the source of the historical material on the ancient Greeks and the Middle Ages used in this paper.
3. R. Gram, *Prevention*, April 1975, p. 64.
4. L. Watson, *Prevention*, December 1976, p. 140.
5. L. Hardy, *Natural Food and Farming*, February 1975, p. 13.
6. J. Rodale and R. Rodale, *The Prevention System for Better Health* (Rodale Press, Emmaus, Pa., 1974).
7. Hooykaas, *op. cit.*, p. 56.
8. J. Graedon, *Prevention*, March 1976, p. 56.
9. H. Taub, *Prevention*, November 1974, p. 183.
10. A. Huxley, quoted in Reference 11.
11. F. Schaeffer, *Pollution and the Death of Man* (Tyndale, Wheaton, Ill., 1970).
12. N. Shealy and A. Freese, *Prevention*, October 1975, p. 60.
13. Rodale & Rodale, *op. cit.*, p. 30.
14. G. Halsell, *Prevention*, January 1976, p. 118.