

A CRITICAL DISCUSSION OF TRACE ELEMENTS AND BIODYNAMIC AGRICULTURE

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In "THE LAND" (1), Russell Lord reports the high points of the McCollum-Pratt Seminar on the Trace Elements. (2) (Keep in mind that the object of this seminar was to make tentative plans for a research project on trace minerals, for which John L. Pratt had donated half a million dollars.)

After one authority was quoted as to the fact that, "awfully little is really known," and he was "appalled by the 'enormity' of the field," Dr. Elvehjem stated, "I know of no case where you have to build a trace element into an organic compound to make it more useful to the animal. In fact, it is just the opposite in every case I know except sulfur. The simple mineral salts are much more available to the animal than the complex forms of minerals. I see no justification whatever for fertilizing the soil with trace elements to produce a plant that is more nutritious."

Dr. Bear: "If what Dr. Elvehjem says is correct, I think it is the function of a committee like this to make this statement to the public, because the public thinks otherwise." (3)

Dr. McCollum: "That statement has been made to the public now for over a quarter of a century."

Dr. Bear: "I would say the 99 per cent of the public do not believe it."

There is a strange inconsistency here. First, the opinion is offered that trace element metabolism is a very new subject, of which the extent is "appalling," and very little is yet known.

Next, a conclusion is offered for publication, completely without substantiation in either theory or fact, that is in contravention to opinions held by the public, and the prestige and influence of the committee is seized upon to advance its promotion. All this at a time when the actual work of the McCollum-Pratt Seminar (for which funds are available for a ten year study) has not begun.

Such haste in promoting one side of a vital question that cannot be settled without a great amount of research, certainly throws a lot of doubt upon the integrity and honesty of the committee. Particularly, since 99 percent of the public, which has only simple "horse sense" to guide it, is admittedly of the contrary opinion.

Biodynamic agriculturists themselves have been prone to make unwarranted statements, some have felt that composting could eliminate all attention to mineral feeding of the soil of an inorganic

nature. This was a natural mistake, in seeing such remarkable stimulation of growth and health of plants from composting as compared to the use of the commonly recommended inorganic fertilizers.

Men of scientific abilities should not, however, express positive opinions on a subject admittedly in its infancy. In fact, they never do, unless they are trying to promote a biased opinion. If they did, they would fail to have the scientific ability. Now, just **WHY DO** men of admitted scientific ability make such unscientific statements? **ONLY WHEN THEY ARE USING THEIR REPUTATION TO PROMOTE SOME COMMERCIAL RACKET.** At least, that is the only explanation I have ever been able to find.

I realize that in making this comment, I am setting myself up as an uncouth thrower of stones at men who have internationally respected reputations. But I have been getting too many peeps behind the scenes in the last few years through cracks in the iron curtain that is so carefully maintained by the makers of fraudulent foods to keep the American people in ignorance as to the real cause of most of their chronic diseases.

When I see the makers of devitalized white flour, that has been illegally poisoned with preservative "bleaches", spending their money advertising in "THE LAND", I begin to wonder just how far the contamination is going to spread. These makers of poisoned food are not innocent of guilt. They knew and admitted forty years ago that the use of bleach was a fraudulent practice, aside from its poisonous effects, for it permitted the sale of low grade wheat flour as a high grade, and the first principle of a pure food law is to stop such practices. (4)

I see no reason for dealing with criminals by dodging the truth or failing to call a spade a spade. They have depended for all these long years on the natural reticence of any civilized person to call others names, even when the truth is obvious to any competent observer. But it is high time the brazen impudence of these racketeers is challenged. And it is nothing short of impudence for these gentry to advertise in this publication, dedicated to better soil, better nutrition, and better health. They have always found that if they advertise in a journal, they can dictate a policy in the editorial pages, and block any publication of material that might be inimical to their own welfare. Our leading medical journals have for many years been carrying full page advertisements, "WHITE BREAD IS WHOLESOME". So it is impossible for those same journals to now advise their physician readers that white bread causes heart disease, or report such experiments as that in, "SCIENCE" (5), where cattle fed similar degerminated cereal products, although continuing to gain weight and appear in good health, began to drop dead, one by one, from heart failure. This degerminated cattle cereal did not carry the bleach poison, which makes white bread kill dogs in a few

weeks, by causing epileptic fits or angina seizures. Dogs being obviously more sensitive to this poison than humans.

Of course, if it were to be found that mineral elements had to be in organic forms, the "enrichment" of white flour with such minerals would become a farce. Its enrichment by synthetic vitamins is already known to all students of vitamin science as such, for no test of the enriching vitamins has shown them to be of the slightest value. On human subjects, both children and adults, no effect was observable. (6) On dogs, the effect was to kill them sooner than if fed a low vitamin diet without the enrichment. (7) In another test, when 54% of the test animals survived on white bread without enrichment, only 49% survived on enriched bread. In the same test, on whole wheat bread, there were NO survivors, as apparently such flour must have much more "bleach" to protect it. (8) But many vitamin "experts" are willing to sell their opinions, and endorse flour enrichment without being able to point to any definite tests worth considering.

The real reason for removing the vitamins in the flour is to keep out the bugs. If the addition of synthetic vitamins really restored the food values, the bugs again would be attracted. But the "enrichment" permits advertising claims, lulls the public into a false sense of security, and fools everybody but the bugs, which still shun the "enriched" product. Naturally, the health building value is still zero— to both the bugs and us. Four thousand men once died on one railroad project in South America, because they tried to feed them on too much white bread. Whole wheat would have saved these lives, if they had shipped in the grain and made the flour as they used it. That was reported in Alfred McCann's book, "The Science of Keeping Young". Some unholy interest has bought up the copyright to McCann's books, and they are unavailable in most libraries, and offers by the original publisher to reprint are turned down. More of the Iron Curtain stuff. Somebody is willing to pay more to keep us ignorant than we can pay to get information.

Now, more on the organic mineral evidence. Insulin happens to be an organically combined mineral, zinc being necessary to its activity. I do not think off-hand, that inorganic zinc is best to make insulin in the pancreas. No evidence at present is available, however, to prove either side of the matter.

Cobalt has just been discovered organically combined in the liver fraction that prevents anemia. Inorganic cobalt was without activity. (9)

Iron in colloidal form (as are all organic forms synthesized by plants) is much less toxic and more effective nutritionally than ionizable (crystalloidal) iron forms. (10).

The ash of the tissues of the different animal species have different trace mineral patterns. (11)

The proteins of every animal species differ chemically and biologically. The difference seems to be in their trace mineral patterns, which act as the determinant of protein specificity and the very genes that carry the blueprints of the cell, and whose determinants which pass on the endowments of heredity to the offspring, depend upon trace minerals for their function. (12)

It is impossible for any animal to live on inorganic foods completely. He must have plant proteins. Animal proteins lose food value if they are from carnivorous species, become more toxic with each degree of recession from the plant source.

Do these proteins owe their indispensibility in part to the same trace mineral patterns that determine their specificity?

Do lower forms of life prepare organically combined minerals as proteins, enzymes, etc., for use by the higher in the plant world?

Those are the questions that need an answer. We do not want them answered by paid prostitutes of science, nor do we want our activities in research to be defiled by their deliberate muddying of the waters. They have always taken advantage of our American liberties, of our American tolerance. But tolerance of dishonesty is a moronic attribute. Racketeers can continue to rob us of health and wealth only if we moronically and meekly continue to tolerate them. Personally, I believe in calling their bluff.

REFERENCES

1. "THE LAND", Summer edition, 1948, p. 301.
2. Johns-Hopkins, April 12-13, 1948.
3. (Dr. Bear is Ex-Research Director of the American Cyanamide Company.)
4. Ladd, E. F. and Stallings, R. E., "Bleaching of Flour", Bulletin No. 72 of the North Dakota Agricultural College Experiment Station, Reprint No. 1 of the Lee Foundation for Nutritional Research, Milwaukee 3, Wisconsin.
5. "Cardiac Failure in Cattle on Vitamin E-free Rations as Revealed by Electrocardiograms", T. W. Gullickson and C. E. Calverly, Science, 104: 312-313, 1946.
6. Journal of the American Medical Association, 125:175, May 13, 1944.
7. Morgan, A. F., "The Effect of Imbalance in the 'filtrate fraction' of the Vitamin B Complex in Dogs", Science, 93:261, March 14, 1941.
8. A.A.A.N. Newsletter. January-February-March, 1949, p. 30-31.
9. Drug Trade News, August 23, 1948, p. 39.
10. Hahn: Journal of Biological Chemistry, 163:435, 1946.
11. Tarck, Fenton B., THE ACTION OF THE LIVING CELL, Experimental Researches in Biology, New York, 1933.
12. Lee & Hanson, PROTOMORPHOLOGY, Lee Foundation for Nutritional Research, Milwaukee 3, Wisconsin, 1947.