FLUORINE AND DENTAL CARIES*

by Royal Lee, D.D.S.

President, Lee Foundation for Nutritional Research, Milwaukee, Wisconsin

A few years ago the discovery was made that fluorine in food and water had an influence on the incidence of tooth decay. Just what are the facts in this relationship?

As yet we are in the dark about the basic biochemical principles involved. Regardless of that present situation of ignorance, we are being rushed by certain interests into a headlong program for adding fluorine compounds to our drinking water long before we know what the effects may be of such wholesale drugging of the population.

The general facts regarding the causes of tooth decay were reviewed in a paper prepared by myself back in 1923. (1) A survey of the literature at that time showed that tooth decay was greatest by far in children who had such poor nutrition that their resistance was lowered not only to tooth decay, but also to all other diseases of childhood. Among school children, the ones that were relatively immune to dental caries were the same ones who had not had the various children's diseases such as measles, mumps, scarlet fever, frequent colds, etc.

It was evident that the endocrine gland system of the child that had failed to get good food was weakened so that they were more susceptible to any infectious condition including tooth decay, which is, in the last analysis, just as much of a result of lowered resistance as tuberculosis, which might be called decay of the lungs.

Dr. McCarrison had already at that time, in 1921, in fact, written his monumental book *Studies in Deficiency Disease*. This showed in detail how the endocrine glands were destroyed progressively by bad food, food like white bread, refined sugar and all the rubbish sold as food in packages in the grocery stores. Today, we are being told about new wonder drugs like ACTH and Cortisone, not realizing that the only possible reason we ever need such expensive medication is because our supplies of these glandular products have been exhausted by the starvation of our own glands out of functional existence through our unwitting use of foods that have been so adulterated that their original food values have been largely destroyed.

If fluorine is necessary as a part of this better nutrition we need, we had better look carefully into the matter and see that the kind offered us as a substitute for the natural food intake is suitable for food use.

The evidence here warns us that somebody is going all out on the old racket of selling us a cheap substitute for a costly food. It is probable that fluorine as a food is only that kind of fluorine that has entered into an organic com-

---

* *An address to the Lakeland Women's Club, Lakeland, Florida, January 3, 1952.*

bination by passing through plant life before we make use of it. Inorganic fluorine is a cumulative poison, which means that it accumulates in the body even if taken in very small doses. Organic fluorine does NOT accumulate in the body regardless of the dosage, and is unquestionably far more effective in preventing dental decay. (2) Whole wheat grown in Deaf Smith County, Texas, contains up to 700 ppm. of fluorine (3) but never has caused fluorosis, while inorganic fluorine in drinking water may cause much fluorosis even in amounts as small as .9 ppm. (4)

Many of our nutritional mineral elements are poisonous in the inorganic state, but indispensable food in the proper organic combination. Cobalt is one, zinc is another. Organic cobalt is known as vitamin B-12. When the organic form of fluorine is ultimately discovered, it probably will be identified as one of the members of a well known vitamin complex, just as organic cobalt has been catalogued as the twelfth offspring of vitamin B complex. (The B family has at this date reached the total number of 15.)

Inorganic cobalt is poisonous to the human system, and cannot be used in any way until converted by soil microbes into B-12. Fluorine probably is worse in being a cumulative poison, as it accumulates in the bones and makes them more and more brittle if taken in as the inorganic form. There is no known antidote for this process.

Most of the cattle in this country have this stony state of bones. And the bone carving industries using cattle bones prefer those from Argentina, where cattle bones become resilient and tough, more like ivory in texture, apparently by reason of a lesser amount of inorganic fluorine in the water supplies.

Our Food & Drug authorities consider the fluorine content of most cattle bones as too high for safe use as bone meal sources for supplying mineral nutritional supplments to the diet. It is the cumulative nature of fluorine as a poison that necessitates this ruling.

So the dangers of reckless use of fluorine seem too obvious to permit the wholesale addition of this element to drinking water before the test installations are completely reported on. A 10 year period was stated to be essential before any reliable statistics were to be available. That was when the first fluoridation was begun back in 1947. Why this haste at the present moment? Who is pushing this dangerous procedure, and why?

In looking into the commercial influences responsible, we find two gangs of unsavory characters. One is the concern that has been wrecking our bread by promoting the sale of oxidizing flour bleaches for the last 40 years, the firm which supplies the apparatus to feed and measure properly the poisons used in both procedures — flour bleaching and water fluoridation. The other gang is the one which for years has whooped up the use of aluminum as kitchen utensils. It seems that fluorides are by-products of the aluminum industry.

First a few words on flour bleaches: They destroy all oxidizable vitamins, and since these vitamins are the ones that protect us from heart disease, we have become a nation celebrated for having heart disease as the foremost cause of death, and the main reason for draft rejections.

That statement is so easily proved that no one can honestly deny it. All you need to do is to run a cardiographic recording on one or 10 people, give them a daily requirement dose of the vitamins lost by oxidation in wheat, and

recheck their heart. In 90 per cent of the persons tested, a 10-minute interval is all that is necessary to show a vast improvement in rhythm and muscular function. This proves, I would say, beyond doubt that those persons are having their health undermined, and their lives shortened by the deficiency directly resulting from flour bleaching.

This simple fact has been cleverly suppressed so that not one doctor in 50 is aware of it. Just who is managing this suppression of life-saving information? I would say those who are profiting by the suppression – the flour millers or the flour bleach promoters.

If these facts were properly known by the doctors we depend upon for treatment of our ailments, I am sure that the statistics of heart disease would very soon drop to a small fraction of those of the present. In one survey, we found that the danger of incurring a fatal attack of heart disease was 35 times more in a person failing to get these wheat vitamins. Thirty-five persons died in a group getting no extra vitamins, before one died in a similar group that was getting the vitamins. Similar figures have been reported by the Shute Institute in Canada.

A syndicate that will suppress such information to make money for its members, certainly will have little compunction in saddling the use of fluorides in poison forms upon us to make us believe that we are preventing tooth decay. Maybe it will; no doubt the intestinal flora of the child will in some degree convert the inorganic fluorine into organic. But what of the greater part that is NOT converted, that part which remains in the bone tissues, and renders the bones brittle, and acts to poison glandular cells? For the sake of safety, we should not take into our food regime ANY INORGANIC FLUORINE AT ALL.

The enrichment of flour with counterfeit synthetic vitamins is another colossal crime to be laid at the door of these schemers. If you have any idea that a synthetic vitamin can substitute for a natural one, please take the trouble to read Report No. 6 of the Lee Foundation. There is no test yet made to my knowledge, either on animals or humans, that failed to prove the synthetic product was incompetent to act as a substitute for natural products.

We also know that in treating heart disease there is no practical substitute for the natural vitamins. We know that 90 per cent of heart patients can live normal lives, forget their troubles, and live long enough to die of old age or some other ailment, if their nutritional program is properly corrected. I say that from seeing it happen for the last 22 years in every part of the United States, and in the clientele of about 20,000 physicians who are aware of the truth about nutrition and heart disease.

The partnership with the aluminum interests seems natural, because both have criminally hoodwinked the American public for many years. Aluminum is poisonous to both plant and animal cells, if in soluble forms. (5) It combines with phosphorus that may be part of vitamin groups, and thereby destroys the vitamin. So it can cause serious deficiencies even in small repeated and continual dosages.

Three of the nation's greatest scientists support me in that statement – Dr. Albert Matthews, Dr. Victor Vaughn, and Dr. Gideon Wells. Their testimony was recorded in a proceeding of the Federal Trade Commission, and later suppressed by the Commission, apparently by reason of political pressure,

and has been withheld from the public for 25 years. More of that story is available in Lee Foundation Report No. 5.

The person incurring such deficiencies may note no symptom other than a gradual loss of some essential nerve function, a paralysis that creeps upon him without warning. Such paralytic diseases are becoming more and more common.

Many physicians and dentists are stampeded into supporting these misrepresentations, for the power wielded by these pressure groups is remarkable in its ramifications. But in every case, these fellows are totally incompetent to support their opinions with facts in a debate. Instead, they devote their efforts to smearing and vilifying the opposition. They take the attitude that no one should criticize or doubt officialdom. They pass the buck when asked for facts by quoting authorities which, when investigated, say far less than they are purported to have said. They even resent the insinuation that their statements should have such support.

But the real common sense basis for not wanting our water poisoned goes back to the basic principles of all pure food laws. The contamination of food or drink with any poison, in any amount, regardless of the smallness or apparent harmlessness, is ADULTERATION. A brewer who permitted harmless quantities of fluorides to get into his beer, after he had used it to sterilize his beer vats, was fined $5,000 for his carelessness, plus a suspended jail sentence of six months.

It is an alarming sign of incompetence in any public official who even entertains the idea of wholesale adulteration of water with a poison.

Dr. Harvey W. Wiley, the first head of the Federal Pure Food & Drug enforcement Administration, was pried out of his job by political pressure back in 1912 because he honestly tried to stop food adulteration. His book of 1930 describes how the Food & Drug Administration had become perverted into the opposite function of *protecting the adulterators!* (*The History of a Crime Against the Pure Food Law* 1930, at your library unless they have lost it—reprint available free, of the last chapter from Lee Foundation, Milwaukee, Wisconsin.)

This activity of the Food & Drug Administration to jump to the defense of food adulterators is demonstrated by the current articles in the *American Magazine* and *Woman's Home Companion* (December 1951), in which Government officials ridicule health foods like blackstrap molasses and wheat germ.

If we all got our quota of wheat germ, there would be no heart disease, in my opinion. As to molasses, it carries the vital vitamins and minerals of the plant juice. Just how vital they are is best shown by the fact that cane sugar can be used to feed bees in winter, bee keepers buying carloads for the purpose. But they cannot use beet sugar, which the chemist says is "chemically identical." (Like synthetic vs. natural vitamins.) Beet sugar will kill bees right now.

Why this difference? I suppose because the cane sugar has a little residual molasses, it has a pleasant flavor, need not be so completely removed as the beet molasses, which has an offensive taste. So the bee still gets enough mineral and vitamin content in the cane sugar to carry him over until he can select his own vitamins and minerals in the field.

But the wise guy from Washington says molasses is a delusion, as a good

food. Who is deluded, do you think? The very tone of these articles brands them as planted propaganda. An honest critic would offer factual material, refrain from v i l i f i c a t i o n and ridicule. These are weapons of the last ditch debater, who knows he is fighting a lost cause, and cannot gracefully accept the inevitable.

At the same time, where the opposition has proven by their own acts that they are criminally guilty of wrongdoing, there is no possible reason to pretend that they are honest citizens. To treat them as such is to be as gullible as they wish us to be. If we have the discretion God gave us, let us use it.

BIBLIOGRAPHY

(1) *"The Systemic Cause of Dental Caries," Lee Foundation, Milwaukee, Wisconsin.*

(2) *Sodium Fluoride administered in water caused a retention of 3.88 mg. per day; the same quantity of fluorine administered as bone meal caused a retention of only 1.73 mg. daily. (Jol. Ind. Hygiene, 1943, 25:112, Machle & Largent).*

(3) *Report from Dr. Geo. W. Heard, Hereford, Texas.*

(4) *Chem. & Engineering News, Aug. 22, 1949, p. 2410.*

(5) *"The Nature & Properties of Soils," Lyon & Buckman, MacMillan, 4th Ed., p. 301.*

Reprinted from the March 24, 1952, issue of the Congressional Record

Fluoridation of Water

EXTENSION OF REMARKS

OF

HON. A. L. MILLER

OF NEBRASKA

IN THE HOUSE OF REPRESENTATIVES

Monday, March 24, 1952

Mr. MILLER of Nebraska. Mr. Speaker, I wish to discuss, briefly, the pros and cons of adding fluorine to the communal water supply, in an effort to prevent dental caries in children. This subject is of a great deal of interest to all of the country.

The Special Committee on Chemicals in Food has just completed exhaustive hearings, the first of its kind, upon the question of adding fluorine to the water supply. We had before the committee 18 witnesses who qualified as experts on the subject. There certainly was no unanimity of opinion among these experts. This was true because the scientists felt that certain experiments now in progress were not far enough along in order for them to issue a sound opinion.

Mr. Speaker, a year ago I introduced a bill which would permit the Commissioners of the District of Columbia to add fluorides to the public water supply of Washington, D. C. I did this because I thought the adding of fluorides at that time was a good thing, and I wanted to have some discussion upon the subject. The Commissioners did not wait for a hearing on the bill; and without legislative authority, and under the prodding from the Health Department, they appeared before the Appropriations Committee requesting moneys to put the plan into operation.

Mr. Speaker, I can speak a little more clearly on the subject today. I say that because of the exhaustive hearings the special committee held. Because of the hearings I am wiser today than yesterday.

I believe that adding fluorides to the drinking water in the proportion 1 part per million, for children, will prevent about 50 percent of the caries that ordinarily occur. I am convinced from the hearings that they do not know at this time what effect fluorides might have upon an acutely or chronically ill child, or upon the older group who might be chronically ill. The scientists just have not completed their findings on this phase of the subject. To me it is unthinkable that the Public Health Service should recommend universal medication of water for everyone until all of the facts about the effects upon the ill are known. It seems to me that the public interest is best served by a more cautious attitude before advocating the addition of any chemical to the water and food supplies. Certainly cities that contemplate adding fluorine to the water should first know what percentage of fluorine they now have in their water supply and they should be aware of the facts—that all of the pros and cons as to

its results on individuals who may be chronically ill has not been established.

I note in the Sunday Star of Sunday, March 23, 1952, that—

> Nearby Maryland area is being tested for fluoride effects, and that the United States Public Health Service is now making a long-range study of its value in water.

The article further states:

> The Public Health Service is trying to find out exactly how fluorides fight tooth decay and how it reacts in some other parts of the body.

I think it is all to the good, Mr. Speaker, that the Public Health Service will continue to investigate as to what happens when fluorides get into the system of the individual who is ill.

I can say to my colleagues, quite frankly, that until I had the advantage of hearing all of the experts on this question, I thought fluorine added to the water supply might be beneficial to every one. I was misled by the Public Health Service. I am a former State health director and have always supported the Public Health Service in the measures that they have advocated. I am sorely disappointed that they now are advocating every single soul in the community should take fluorine before all of the facts of experiments now in progress have been completed. It may be a good thing for everyone, but we ought to know whether sick children or adults with kidney disease, diabetes, fracture of a bone, or thyroid disturbances or tuberculosis, or any chronic disease, are able to eliminate fluorides as effectively as normal people do. In the testimony before our committee I could find no record of any such studies.

I am further disturbed, Mr. Speaker, because I was misled and perhaps others have been misled by statements that the American Medical Association had given their unqualified approval to this plan. I believe they do endorse the plan in prinple, but it is a qualified endorsement. Let me call your attention to what Dr. George Lull, secretary and general manager of the American Medical Association, said in an insert in the record of the hearings on March 6, 1952, which appears on pages 3971 and 3972 of the printed hearings, and I quote:

> The council purposely refrains from making any recommendations that communities support or oppose projects for the fluoridation of water supplies.

And on page 3972:

> The house of delegates did not urge or recommend that any community undertake to fluoridate their water supplies.

Mr. Speaker, that statement is of a definite nature. I was led to believe that they had given fluoridation of water their wholehearted support. I was told that by the Public Health Service. I have been guilty of quoting the American Medical Association as giving mass fluoridation their unqualified approval.

Mr. Speaker, despite my best efforts, and from the evidence before my committee, I cannot find any public evidence that gave me the impression that the American Medical Association, the Dental Association, or several other health agencies, now recommending the fluoridation of water, had done any original work of their own. These groups were simply endorsing each other's opinions.

The possibility of using fluorides for control of children's dental caries is an attractive one and in my opinion warrants additional study. There is no scientific basis for recommending immediate acceptance of the proposals to treat the entire population with fluorides. The mass medication of fluorides is still in the experimental category, and there is certainly a need for additional scientific studies. There is nothing that presents an urgent decision until decisive experiments have been done. It will then be time to make the decision.

It is quite possible that the use of fluorides in preventing dental caries will be a major discovery in the field of dentistry. It is too early to evaluate the results of experiments now in progress.

Mr. Speaker, it is disturbing to me when the men in the Public Health Service, who, as late as 1950, were not ready to endorse the universal use of fluorine, have now, almost to a man, come out for the endorsement. I want to refer to some published papers of Dr. Francis A. Arnold, National Institute of Health. The papers published in 1948, 1949, and 1950 said in substance:

> The evaluation of the effects of fluorine in water has not been established and must wait until the experiments now in progress are completed.

Dr. Arnold published another paper on dental research in May of 1951. The paper appeared in Tufts College dental school magazine. The paper refers to dental research as well as to the use of fluorine in water. I quote from page 3778 of the hearings held March 17, 1952:

> It is too early to evaluate the effects of this increased research activity on the improvement of the dental health of the children in the United States.

Dr. Arnold published another paper entitled "Fluoride Therapy for the Control of Dental Caries," reprinted in the Journal of the American Dental Association in October 1948. The conclusions are:

> At the present there is no acceptable con-

trolled scientific evidence in an adequate number of observations with which to evaluate the supplemental feeding of fluoridation for caries control.

Mr. Speaker, as I said in the beginning, I am convinced that the proper use of fluorides in the water or milk, or by tablet form, for children may reduce caries about 50 percent. The 18 experts which appeared before our committee all admitted that there are experiments now going on as to what the effects might be on the older age group, as well as the children and adults who might have chronic diseases, but the experiments are not completed and some of them are not ready to render an opinion. It seems unthinkable to me that we should proceed with universal medication until these facts have been carefully examined.

The committee had ample evidence that even in areas where fluorides occur naturally that they still have considerable caries. It is also a known fact that areas that have no fluorides in their water may have a little dental caries. It is by no means a cure-all. One dentist even wrote me that dental caries might be the cause of poliomyelitis, and because I objected to the use of fluorine for everyone, I might be the cause of numerous cases of polio. How ridiculous that statement is from a man who should be a thinking, scientific man.

Mr. Speaker, at Newburg, N. Y., an exhaustive experiment is being carried on which will be completed in about 5 years. When completed they will have some conclusive evidence as to the effect, if any, fluorine might have on the health of the older group and those with chronic diseases. This will also include the effects upon the unborn child. Dr. David B. Ast, of the American Public Health Service, is heading up this experiment. He published an article in volume 4, No. 6, of the June 9, 1950, issue of the American Journal of Public Health on the question of fluorides in water. A final conclusion of the article appears on page 4042 of the hearings, and I quote:

> Final conclusions regarding the possible systemic effects of fluoride in the dosage employed should not be drawn before termination of the 10-year study.
>
> More refined techniques may also be available in the future in studying pertinent aspects of the problem. It must be emphasized, however, that a longer period of observation is required before final conclusions can be drawn. The possibility of demonstrated accumulative effects of the fluorides in the final years of the 10-year study cannot be eliminated at this time.

Mr. Speaker, I repeatedly asked the following question of nearly every witness which appeared before our committee:

> What experiments have been carried on to demonstrate the effects of fluorides might have upon older people and those with chronic diseases, or in abnormal children?

All of the advocates of the use of fluorides in water said that no conclusions had been reached, but studies were in progress. Again I repeat, Mr. Speaker, since these studies are in progress, it seems to me to be in the public interest for communities that wish to use fluorides in their water supply to know that the results of the experiments now being made have not been completed or published.

Mr. Speaker, every Member of Congress probably sends out numerous yearbooks of the Department of Agriculture. The 1950–51 yearbook has a chapter entitled "Hazards and Potential Drugs." On page 722 you find this statement:

> For example, the work of the pharmacology laboratory demonstrated that the fluoride ion inhibits the enzyme bone phosphatase in young rats and thereby retards calcification of the leg bones.

The Department of Agriculture has recommended that no fluorides be fed to brood sows. Experimental work on rats and mice indicate a lessened mental reaction in rats and mice who have had fluorides. What effect fluorides might have on the unborn child has not been established. Evidence points to the fact that the placenta carries a large amount of fluorides.

A check of the vital statistics of Grand Rapids, Mich.—which is the only city of any size that has had artificial fluoridation for more than 4 years—shows that the death rate from heart disease in the year 1944 numbered 585. Four years later, after fluoridation had started, there were 1,059 deaths. There was an increase of 50 percent in the deaths from nephritis. There was an increase of 50 percent, over a period of 4 years, in the deaths from intra-cranial lesions. These are official figures contained in the Vital Statistics of the United States published annually by the United States Public Health Service; I am not saying that fluoridation was the cause. However, the Public Health Service takes pride in pointing out, through statistics, that health might even be better when florides are in the water. The records do not prove their point.

Mr. Speaker, at the close of these remarks I desire to place in the RECORD the names of witnesses that appeared before our committee. They are marked the pros and the cons. You will note that all of the experts grounded in the science of biochemistry, have advocated the go-slow sign on the use of fluorides in drinking water. I believe that the dental profession and other public-minded individ-

uals, like myself, have been misled by the Public Health Service, because all of the facts have not been made available upon this subject.

I am reminded that 25 years ago the Public Health Service, recommended the universal use of iodine in water. Later on it was discovered that iodine affected people with goiters, and it was discontinued.

It is difficult for me to understand how high officials in the Public Health Service could change their mind, over a 3-month period and completely reverse the field. Where once they advocated the go-slow sign on the use of fluorides they now apparently have gone overboard, and put out large amounts of propaganda favoring the fluoridation of water. I am certain that the dental profession merely echoes and endorses the opinions of the Public Health Service. They have done little experimental work themselves.

I sometimes wonder if the Aluminum Co. of America, and its many subsidiary companies might not have a deep interest in getting rid of the waste products from the manufacture of aluminum, because these products contain a large amount of fluoride. In this connection it is interesting to know that Oscar Ewing, who now heads up the Federal Security Administration, and the firm of attorneys he was with—Hubbard, Hill & Ewing—represents the Aluminum Co. of America. I understand Mr. Ewing's name no longer appears on the door—Hubbard, Hill & Hughes. It would be interesting to know if he shares in the yearly cut of their melon.

I have also noted, Mr. Speaker, that the District of Columbia Commissioners propose to use sodium silico fluorides. This is cheaper, but the most dangerous type of element. It forms a highly toxic fluoric acid. If fluorides must be used, the biochemists recommend that sodium fluoride should be used.

Again, Mr. Speaker, I am not opposing the proper use of the proper dose of fluorides for normal children. There is an alternate method of giving fluorides to them besides medicating the water supply of everyone. I do feel that it is in the public interest that communities have all the facts before they put fluorine in the water. Experiments now in progress should give that answer within the next 5 or 6 years.

This is not an urgent matter. I would recommend the go-slow sign until we are thoroughly convinced that no damage will come to the sick child, or to the individuals in the old age group, who may have chronic diseases. The picture today is not clear. Communities who insist on putting fluorides in their water should know that experiments now in progress, which will be completed in 5 years, may supply the answer as to whether universal medication of water will be a good thing for all the people.

WITNESSES BEFORE SELECT COMMITTEE INVESTIGATING FLUORINE IN WATER

FOR FLOURIDES IN DRINKING WATER

Bruce D. Forsythe, D. D. S., Assistant Surgeon General, Chief Dental Officer, Public Health Service, Federal Security Agency, Washington, D. C.

Dr. John K. Knutson, Division of Dental Public Health, United States Public Health Service, Washington, D. C.

David B. Ast, D. D. S., M. P. H., the American Public Health Association, Albany, N. Y.

Dr. Francis F. Heyroth, Kettering Laboratory, College of Medicine, University of Cincinnati.

Dr. John D. Porterfield, the Association of State and Territorial Health Officers, Columbus, Ohio.

Francis A. Arnold, D. D. S., National Institutes of Health, Bethesda, Md.

H. Trendley Dean, D. D. S., National Institutes of Health, Bethesda, Md.

Dr. Isadore Zipkin, National Institutes of Health, Bethesda, Md.

Dr. H. B. Andervont, Chief of Laboratory of Biology, National Cancer Institute, Bethesda, Md.

Mr. J. Roy Doty, Secretary of the American Dental Associations' Council on Dental Therapeutics, Chicago, Ill.

Mr. J. B. Blayney, professor, dental surgery, and director of the Walter G. Zoller Memorial Clinic, University of Chicago.

AGAINST FLUORIDES IN WATER

Dr. Robert S. Harris, Nutritional Biochemistry Laboratories, Department of Food Technology, Massachusetts Institute of Technology, Cambridge, Mass.

Dr. Alfred Taylor, Biochemical Institute of the University of Texas, Austin, Tex.

Prof. E. B. Hart, professor of Biochemistry, University of Wisconsin, Madison, Wis.

Dr. V. O. Hurme, director of Clinical Research, Forsyth Dental Infirmary for Children, Boston, Mass.

Dr. Margaret Cammach Smith, former head, Department of Human Nutrition, University of Arizona, Tucson, Ariz.

Prof. Howard V. Smith, associate agricultural chemist, University of Arizona, Tucson, Ariz.

Dr. Hans H. Neumann, 1377 Kew Avenue, Hewlitt, N. Y.

Lee Foundation for Nutritional Research

(A non-profit Public Service Institution, Chartered by the State of Wisconsin, to Investigate and Disseminate Facts relating to Nutrition)

Reprint 53B Milwaukee, Wisconsin