The GRIM TRUTH about FLUORIDATION

ROBERT M. BUCK

A provocative book about fluoridation and its inherent dangers

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by Robert M. Buck

Few issues of public health and safety have aroused the storm of controversy that has raged in recent years over the practice of adding minute quantities of fluoride compounds to public water supplies as a means of reducing the number of cavities in children's teeth. Responsible health authorities have defended water fluoridation; equally responsible doctors and dentists have called for further study and research.

Pro-fluoridationists have cited surveys showing fewer cavities in children drinking fluoridated water. Uncommitted doctors have questioned the validity of such "test areas," pointing out inadequacies of control in these experiments. Anti-fluoridationists have pointed to reports exposing the long-term effects of fluoridation, and at least one responsible medical source has demonstrated the possibility of a link between fluorides and certain forms of cancer.

Through all the conflicting statements

(Continued on back flap)

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Robert M. Buck

The Grim Truth About Fluoridation

G. P. PUTNAM'S SONS
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MANUFACTURED IN THE UNITED STATES OF AMERICA

It is now clear that fluoride is a potentially harmful substance when present in the drinking water in any amount.

DR. SIMON BEISLER,
Chief of Urology, Roosevelt Hospital, N.Y.C., and past president of the American Urological Association, November, 1963.

Contents

THE *first duty of any scientific worker is to cultivate a completely open mind. He must have no previous convictions. He must never set out to prove something; he must be single-minded in his search for the truth.*

A student in a scientific college is always taught (if his professor is worth his salt) that, before deciding that his conclusions on any subject are right, he must try to prove them wrong. Only when all his efforts to do so fail, is he entitled to begin to hope that he is right.

Those who have worked in fluoridation have not only failed in this respect, they have shown antagonism to anyone who even suggests that they may be wrong.

—LEONARD WICKENDEN, in *Our Daily Poison;* New York, 1956

CHAPTER I

The Beginning

AROUND the turn of the century large numbers of industrial plants and sundry cities were inflicting on the public widespread pollution of atmosphere, pasturage, and streams of water. State and local governments began to consider doing something about it.

For instance, the City of Chicago was dumping its sewage into the Chicago River which, in turn, was flushing it into Lake Michigan, the natural reservoir of that city's public water supply. The Illinois state legislature created the Sanitary District of Chicago and authorized the board of trustees thereof to construct a canal that, in 1919, reversed the current of the Chicago River, thereby ceasing to pollute the water of Lake Michigan.

This single example is here cited because it was the reverse of the present effort of the United States Public Health Service, aided by the American Dental Association, to add poison *to* our water.

The Illinois project touched off a widespread series of campaigns to protect streams from sewage pollution. Even as this book is written, more than fifty years later, such an effort is under way to keep sewage out of the Potomac River, which supplies drinking water for our nation's capital and its environs, whereas the District of Columbia Board of Commissioners is spending $160,000 a year poisoning that same water with sodium silicofluoride.

And the United States Public Health Service is now up to its elbows in a world-wide effort to induce cities to shovel fluorides by the ton into public water supplies. These fluorides, even in what must seem to the uninitiated an overwhelming dilution, constitute so serious a cumulative poison that none can foretell the extent of its harmful effects on entire populations. Fluoridation has been promoted by this arm of the Federal Government (the USPHS) for more than ten years. Disinterested scientists say that it may take as much as thirty years for it to do its maximum deadly work as a poison at the dilution officially sponsored by the PHS.

Not the least accusation that can be advanced against fluoridation, as currently urged, is that it is compulsory general medication of water drinkers in ruthless violation of their personal right and freedom to refuse to be medicined —much less poisoned.

Of course, such a project must be given protective justification by its sponsors. The "scientists" of the Public Health Service say that fluoridation of public water supplies is the best way to prevent ruinous tooth decay (caries). It has been demonstrated that this remedy is efficacious, if at all, only for those exposed to fluorides before attaining the age of eighteen. And *they* can be treated more effectively and much, *much* less expensively by individual application without putting the health and lives of millions of older folk, as well as themselves, in jeopardy.

"Experts" enlisted by the USPHS assure the public that general fluoridation of drinking water will reduce incidence of caries by as much as 65 percent. No credible support has been advanced for such a "calculation."

One of the most convincing counts against the assertions of the sponsors of fluoridation is found in the rowdy tactics by which that cause is sought to be advanced. Noisy disputation seems to be their chief reliance. They smear and belittle those who disagree with them. They "stack the cards" in debate, refusing to meet discussion on fair and impartial terms. True,

the Public Health Service disclaims intention to *compel* local governments to fluoridate; but that is a tongue-in-cheek pretense in view of the fact that its agents do all in their power, short of direct Federal fiat, to stampede municipal officials into adopting the measure and to do so, where possible, without submitting it to the electorate by referendum.

Notwithstanding these steamroller tactics, communities are increasingly resorting to plebiscite and, by this means, have applied brakes to the propaganda drive of the USPHS.

Representative Walter S. Baring (D., Nev.) has consistently publicly opposed fluoridation. In a speech in the Honse of Representatives, October 16, 1961, he said:

> During the past year, voters representing some 2,500,000 water users in 43, out of 56, cities rejected fluoridation with little more than about 50,000 voters having accepted it. . . .
>
> Another aspect of this problem is to bring to the attention of this Congress the unethical methods used in promoting fluoridation, starting with the fourth annual conference of the state dental directors and the Public Health Service held in Washington in June, 1951, culminating in a now newly accelerated high pressure program of the U. S. Dental Public Health Division (of the USPHS) that will be conducted through the use of undetermined funds now being requested under House bill 4742 and Senate bill 917.
>
> Mr. Speaker, these are not good bills.

In 1902 J. M. Eager, a United States Marine surgeon stationed in Naples, reported a phenomenon he had observed which was unlike anything in his experience or hearsay. The Italians called it "yellow writing on the teeth," a reaction to the disfigurement it created in the appearance. Dr. Eager's report attracted little attention. So a few years later Dr. Frederick S. McKay was confronted with a perplexing problem when some of his patients in Colorado Springs, Colorado, sought his help in combating mottled, pitted and chipped teeth. In 1908 he brought up the problem at a meeting of the local dental society, and the members agreed to bring a

patient to the meeting of the State Dental Association at Boulder.

Dr. McKay was surprised to find that these mottled, pitted and stained teeth seemed to show less decay than normal teeth. He tried for many years to discover the source of the disfigurements, ultimately accepting the natives' theory that the local water supply was responsible. For a time he sought other sources of water in hope of stopping the disfigurements which came to be regarded as evidence of more serious weaknesses in the bones of the body.

Fluoride's identification as the cause of such dental disfiguration did not come until 1930, and it was made by the Aluminum Company of America's chemist, Dr. H. V. Churchill, who had been appointed by the company to help its employees find relief from the mysterious agent that disfigured their mouths.

At this time fluorine was known only as a poison and was not thought of as a normal constituent of drinking water. Having a powerful effect on nerves, bones, and body tissues, its discovery in drinking water gave rise to considerable alarm. In Colorado Springs, the local water supply was no longer used for the town's infants, and uncontaminated water was imported from Denver.

With the help of Dr. Churchill, Dr. H. T. Dean, a U. S. Public Health Service officer, launched an investigation of the effect of fluoride on the teeth. He concluded that when the fluoride content of water was no more than one part per million parts of water, the decay-resisting effect functioned with little marked mottling of teeth. He also concluded that in some towns which used naturally fluoridated water no apparent damage could be observed when the fluorine content was as much as four parts per million.

These conclusions and deductions were the foundation on which the great fluoridation experiment in the United States began.

CHAPTER II

Commercial vs Federal Chemists

EARLY in the 1940's I moved into new living quarters where I found myself besieged by roaches. I consulted a druggist. He sold me a carton of vivid blue powder, the label on which contained the following legend:

POISON  POISON

1 lb.

SODIUM FLUORIDEMERCK

PURIFIED—TINTED

Active Ingredients:	SODIUM FLUORIDE	95%
	SODIUM SILICOFLUORIDE	1.5%
Inert Ingredients:	. . . . .	3.5%

Merck & Co., Inc. Manufacturing Chemists, Rahway, N. J.
NOTE.—This Sodium Fluoride is colored Nile Blue to avoid danger of mistaking it for any food product. The color does not affect its efficiency.

CAUTION

Sodium Fluoride is highly toxic and must be used with care pursuant to the following directions:

Keep it away from food products.
Keep it away from reach of children.

Sodium Fluoride is irritating; therefore do not allow it to get into cuts or wounds. To avoid inhaling it, cover the nose and mouth with a wet cloth while using.

ANTIDOTE

Call a Physician at Once!

Give at once large draughts of lime water or weak calcium chloride solution; stimulants of strong coffee or aromatic spirits of ammonia.

Artificial respiration; keep lower extremities and chest warm; digitalis hypodermically; 10 grains calcium gluconate intravenously.

Promptly I found other means of dealing with roaches.

When, in 1952, the city authorities of our national capital fluoridated the public water supply, I began to quench my thirst and cook with natural, nonfluoric waters at a personal cost to me, as a lone householder, of some $100 a year. This was in addition to increased cost as my share, compulsory and concealed in tax charges, of the new general cost of public water service.

I also scurried to my bookshelves.

I had no chemical dictionary and perhaps would not have understood its contents anyway. But my old edition of Webster's New International Dictionary (unabridged) proved interesting. The subjoined definition, substantially the same as that I read in 1932 is, however, taken from the new third (1961) edition of the same tome.

Fluosilicate is defined as "a salt of fluosilicic acid." On the same page, fluosilicic acid is defined as "an unstable corrosive poisonous acid H_2SiF_6 that is known chiefly in aqueous solution and in the form of its salts, that is made usu. by the reaction of silicon tetrafluoride with water."

Silicon fluoride is defined as "a fluoride of silicon; *esp.*: SILICON TETRACHLORIDE," which is defined as:

a colorless fuming suffocating gas SiF made by the action of fluorine on silicon or of hydrofluoric acid on silica or

silicates (as glass) and used chiefly in making fluosilicic acid and fluosilicates.

Tetrafluoride is defined as "a fluoride containing four atoms of fluorine."

This leads to the following definition of fluorine:

a nonmetallic univalent element belonging to the halogens that is normally a pale yellowish flammable irritating toxic gas, that is one of the most powerful oxidizing agents known, attacking water, most metals, and organic compounds, that occurs naturally only in combination in the form of minerals (as fluorite, cryolite, or fluorapatite) and in small amounts in several other minerals, in mineral waters, and in bones and teeth, that is best isolated by electrolysis of a molten mixture of hydrogen fluoride and potassium fluoride, and that is used chiefly in making fluorine compounds—symbol F.

The foregoing descriptive material relates to the chemical with which (much diluted to be sure, yet still poisonous—and cumulatively so) the U. S. Public Health Service has, for nearly 20 years, sought to induce cities to dope practically all of the drinking water in this nation.

Merck & Co. says it is highly poisonous, venturing no advice to water it down. Likewise, the dictionary. The Public Health Service, to paraphrase its language somewhat, calls it innocuous, that is, if sufficiently diluted in one million times its volume of water.

The business concern protects itself fully from accusation of recklessness in handling a deadly poison.

The "scientists" close their eyes and ears, hoping no scandal will smite them.

But let no member of the public forget this:

The Public Health Service itself unintentionally proclaimed the deadly nature of fluoridation *when it decreed 1 part per million to be the "safe" dose.*

One part fluoride to 1,000,000 parts of water equals *one drop of the chemical in seventeen gallons of water.* Then it must follow that two drops in seventeen gallons of water is not a safe dose. It is twice as strong as a safe dose.

CHAPTER III

Poison? Fiddlesticks! Only 1/272 of a Drop

WHEN I set about verifying my information it occurred to me to check again on Merck & Co. Perhaps, after twenty years of "progress," they had changed their minds. After all, politically appointed "scientists" and their satellites were pooh-poohing the menace to mankind of sodium fluoride if sufficiently diluted.

So I bought another one-pound carton, issue of 1961.

My caution was groundless. Skull and crossbones (symbol of death, says Webster's dictionary) still adorned the label. The language had been condensed, but not modified. Warning that it might be fatal if any of the contents was inhaled or swallowed, continued to be proclaimed with unabated emphasis.

Furthermore, I had to sign the druggist's poison register to get it.

I did not negotiate this purchase to mock the Public Health Service. I performed my end of the transaction in order to be able to start with one indisputable point; namely, that sodium fluoride is a deadly poison. Period.

In whatsoever way, or in whatsoever dilution it gets into our drinking water, it is a cold, impersonal and inhumane fact that it has been deliberately placed there and that it still is poisonous.

But, says the Public Health Service, we recommend that 1 ppm be the dilution. That means that one part of fluoride be added to every 1,000,000 parts of water—and only 6/10 of a single part (0.6) per million in hot climates.

Why this nice distinction, one is compelled to ask, if they are not playing with a dangerous poison?

And, says the USPHS spokesmen, no one has proved that so weak a solution has killed anyone.

Observe that sly shifting of the burden of proof.

Obligation lies heavily on every physician not to kill a patient by mistake. And proof has nothing to do with that. Do Public Health Service "scientists" repudiate that responsibility? I have not heard anyone quoted as saying that a glass of water containing 1/272 of a drop of fluorine (1 ppm) would, alone, strike the imbiber dead.

Remember!

It is a cumulative poison!

Only a portion of it is eliminated by natural means; the remainder settles in bony and other tissues to be built upon by subsequent diluted doses.

Of course, proof of an eventual tragedy would be difficult, if not impossible, and belated proof would not resuscitate a dead victim. But proof of the contrary is still more certain to be unavailable. The risk must remain a matter of uneasy faith as long as public officials shovel fluorides into the only water that is available for millions of Americans to drink and with which to cook unless, or until, resulting fatalities begin to multiply from progressively more widespread dosage of this cumulatively toxic chemical. Would we be expected by *scientists* to sit idly by and endure such a prolonged experiment? I mean, of course, by scientists, not by pretenders.

Certainly not! Before such goings on there must be sanction by others than politicians. And the burden of proof, properly, may only rest on the experimenters, not the survivors of their victims, if any.

The position of the Public Health Service might reasonably impress observers as a hint that repeated imbibing of sufficiently small portions of deadly poison is perfectly all right between friends in the spirit of that pre-prohibition barroom ditty:

> Just another little drink
> Cannot do us any harm.

This reporter does not mean to imply that the Public Health Service, or anyone else, is consciously perpetrating a macabre jest, much less a criminal conspiracy with malicious, malevolent, or malign intent, upon the American public. But—

In the gradual crackup of our civilization that seems currently to be under way, what is happening to that heretofore generally understood responsibility of every practitioner of the healing arts to keep himself perfectly and unremittingly sure that he knows what he is doing when he feels he must place *any* person's life in jeopardy? Place it in jeopardy not only of *sudden* death, but of tragedy thirty years hence?

As already stated (and it cannot be repeated too often), sodium fluoride is not only a poison that slays quickly if taken in sufficient potency; it is also a cumulative poison.

Scientists know this. Dabblers who do not know it, who disbelieve it or who, for any other reason, are willing to take a chance, are not scientists.

Propagandists for the fluoridation program have spared no effort to belittle the devoted opposition of better scientists than themselves who, for principle and not for pelf or power, are battling without truce to protect consumers of water.

I know little about any specific science, but there is little that I do *not* know about propaganda. I have toiled through decades scraping away layers of it to discover underlying facts.

Two eminent specialists and one able and conscientious

publicist are joint authors of a book, *The American Fluoridation Experiment* (New York, 1961). I stake my reputation, after 60 years of adult activity, most of it in newspaper reporting and varied types of research, upon the reliability and integrity of its three authors. I expect it will be deemed by some regrettable that I cannot express the same confidence in the U. S. Public Health Service.

I have read that book and a score of others, and hundreds of pamphlets, on fluoridation; and every edition of *National Fluoridation News* since it was first published in January, 1955.

The authors of the book to which I refer are:

Frederick B. Exner, M.D., of Seattle, Wash., an X-ray diagnostician and therapist, biologist, chemist, physicist, pathologist and biostatistician;

George L. Waldbott, M.D., of Detroit, Michigan, an allergist, clinician, hospital executive, researcher and author of a voluminous literature, much of it on fluoridation; and

James Rorty, seasoned journalist who has specialized widely in medical and nutritional subjects.

The book is a detailed and sober examination of the ways in which fluoridationists have propagandized the American public into accepting and even participating in a still untested campaign of mass "medication" in the name of science. I shall refer to *The American Fluoridation Experiment* and its authors again in the course of this book. But since I do not have the space to go at length into the "how's" of fluoridationist methods, I will recommend now that any reader who wants to know the entire, detailed, horrifying story should read this volume.

CHAPTER IV

Federal Jobsters Disagree

MOST of my adult life has been devoted to journalism. It is the prime responsibility of reporters, not only to *pursue*, but to *find* truth; and state it—publicly.

To be sure, the same responsibility rests heavily upon scientists; but when those asserting loyalty to science fail to discharge that duty, they multiply the burden of any reporter who is worth a fig. For the latter there is no alibi. Fraud is his prey.

Development of the fluoridation program has left behind itself a well-blazed trail of sham. While small blame properly attaches to the nontechnical citizen for failure to read the signs of quackery, stupidity, or downright falsehood, there is no excuse for newsmen who fail to detect them and to say so in print.

In addition, it must not fail to be said that, harsh as must be the criticism of pseudo-scientists who cheat, no fury can be too hell-born for those on public payrolls who do so.

Basic to the USPHS water-tampering program is insistence by its promoters upon the alleged scientific fact that water fluoridation is beneficial to teeth. No sufficient, responsible research supports that thesis. The bungling "experiments" substituted for sound professional inquiry have been denounced by able laboratory technicians, as well as

by capable statisticians, both in this country and abroad. An imposing number of these have severely, and in convincing detail, criticized the research methods and the interpretations of "results" advanced by proponents of fluoridation.

Furthermore, government specialists who have worked on the problem of curbing dental caries (tooth decay) are by no means in agreement. Publications of the Department of Agriculture, for example, fail signally to support many repeated assertions of the Public Health Service. Yet politico-scientists, in large numbers, swallow unmasticated the crude PHS verbal regimen.

In 1954, the Interstate and Foreign Commerce Committee of the House of Representatives held public hearings* on H. R. 2341 (83d Congress, 2d session) introduced by Representative Roy W. Wier, of Minnesota, to forbid fluoridation of any of the public waters of the United States. (The District of Columbia had adopted fluoridation two years previously.)

The committee had called for the opinions of sundry public officials. The first response read into the record was signed by (then) President Samuel Spencer, of the Board of Commissioners, D.C. in a 500-word letter directed to "the harm which, in the light of scientific opinion, would ensue if fluoridation were prohibited," he said:

> While H. R. 2341 purports to be a bill to protect the public health from the dangers of fluoridation of water, such dangers seem to be imaginary.

He then quoted the local director of public health as saying that "ten years after such enactment there would be 65 percent more caries in the teeth of the children of the District [of Columbia] and that, by the time such children

* Referred to hereinafter as the Wolverton Hearings, Representative Charles A. Wolverton having been its chairman.

were 40 years of age, 95 percent of them would have lost the majority of their teeth."

The foregoing incredible statement was traced, not to the director of public health, but to William Cary, a bureau chief in the D. C. Health Department who formerly had been employed by the U. S. Public Health Service.

Acting Secretary Orme Lewis, of the Department of the Interior, laid himself open to ridicule by writing against the bill because "it would deprive the American Indian of the health benefits to be derived from carefully controlled fluorides in their drinking water."

It was refreshing to find a short and honest letter in the record of the hearings from Deputy Postmaster General C. R. Hook, Jr. He said:

> This department is not in a position to report on this measure because it does not have the requisite technical knowledge necessary to formulate an opinion concerning the propriety of treating drinking water with fluoride.

I could find no letter in the printed record from the Department of Agriculture. From the early 1930's the scientists of that department had been expressing themselves frequently and emphatically about damage to livestock from fluorine poisoning. In its 1939 yearbook, Agriculture had much to say on the subject as, for example, from page 21:

> Fluorine is poisonous to human beings in very small amounts. It affects the teeth, producing mottled enamel and structural weakness. The amounts ordinarily received in foods are not harmful, but in certain areas in 20 states in the west and middle west, and in several foreign countries the water supply contains enough to be harmful. One effective method for *removing fluorine from water* by filtering through ground bones has recently been developed by the Arizona Agricultural Experiment Station. It is based on the fact that fluorine has an affinity for bone calcium, with which it readily combines. [Emphasis added.]

Beginning on page 211, the same yearbook contains an article by Margaret Cammack Smith, then professor of nutrition in the University of Arizona, in which she said:

> Because of its chemical affinity for calcium, it [fluorine] is deposited in the bones and teeth in variable amounts in combination with calcium, but it is without known physiological function.
>
> Too much fluorine in the water supply is detrimental. Fluorine has been shown to be the cause of a disfiguring dental disease known as mottled enamel, or fluorosis. Fluorine interferes with the normal calcification of the teeth during the process of their formation so that the affected teeth, in addition to being discolored and ugly in appearance, are structurally weak, and deteriorate early in life. For this reason, it is especially important that fluorine be avoided during the period of tooth formation; that is, from birth to the age of 12 years.
>
> Correlation studies show that this dental disease [fluorosis] is always found when water containing even so little as I ppm of fluorine is used continuously during the period of formation of the permanent teeth.

Mrs. Smith's contribution created the opposite impression in the ranks of the fluoridationists among whose chief claims was that their program would especially serve to reduce caries in children.

The whole issue of safety or hazard might well rest on the work of Dr. Floyd DeEds, described in the 1950–51 yearbook of Agriculture as:

> a native of Ohio and a graduate of Western Reserve University [who] has a doctor's degree in pharmacology from Stanford University. He was assistant professor of pharmacology at Stanford School of Medicine from 1925 to 1927 and pharmacologist at the Hygienic Laboratory of the U. S. Public Health Service from 1927 to 1931. Since 1931 he has been in charge of the Pharmacology Laboratory of the Department of Agriculture.

On the evidence of the paper herein referred to, he could not be deemed a drinking-water fluoridationist. And he could not, within reason, be included among the targets for the epithets so wantonly flung at antifluoridationists by the Public Health Service and the American Dental Association. He meets the tests of a scientist more completely than they do.

In collaboration with Dr. Robert H. Wilson and Dr. Anthony M. Ambrose, two colleagues in a pharmacology division of the Bureau of Agricultural and Industrial Chemistry, Dr. DeEds wrote a paper that was published, under the title "Hazards and Potential Drugs," in the 1950–51 yearbook of Agriculture. It authoritatively answers the fluoridationists on some of the most vital points. Extracts from that paper follow (with emphasis added):

> The science of pharmacology in its broadest sense is concerned with the effects of chemical agents upon living protoplasm.
>
> Pharmacological data permit conclusions as to the harmfulness or usefulness of chemical agents. . . .
>
> A pharmacology laboratory was established in the department [of Agriculture] in 1931. As will be shown later, the results obtained on chronic toxicity studies of potential, 2-acetaminofluorene, justified the pharmacological investigations. . . .
>
> The investigations on the fluorine compounds demonstrated that, despite their widely different solubilities, all were sufficiently soluble and absorbable to provide enough fluorine to mottle the incisor teeth in albino rats. With that as a standard for judging fluorine toxicity, pharmacologists learned that the susceptibility to fluorine toxicity was increased by raising the metabolic rate. . . . The practical significance of the discovery is in its bearing on the public health hazard of fluorine, whether it be in spray residues or in drinking water. . . . *Tolerance limits for the allowable amount of fluorine likely to be ingested by the public should be low enough to protect the hyperthyroid individual and the normal one.*

The claim that small amounts of fluorine in drinking water or the application of a fluoride, such as sodium fluoride, to the teeth will reduce the incidence of dental caries is undoubtedly correct. Checking dental caries and, in slightly larger amounts, causing mottled teeth, however, *are not the only effects of fluorides.* These compounds are enzymatic poisons. 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.* . . .

Even more important than acute toxicity is chronic toxicity. . . . Contrary to what many people believe, *lack of toxicity from a single large dose does not prove that a substance will be harmless in small doses over a period of time,* nor is it necessarily true that a compound with high acute toxicity will have any chronic toxicity. . . .

Experience has shown that a substance that has a chronic toxicity will ordinarily give an indication of it in 100 days. There are enough exceptions, however, to make it unsafe to stop testing at that time. Some of the rats were allowed to live, and *on the 136th day one was found with a lump on the side of the head. A week later, two others had lumps—one in the thigh, the other in the abdomen.*

All the lumps proved to be cancer.

Because cancer had never been observed in this colony of rats, acetaminofluorene was studied more intensively. The early finding was enough to have acetaminofluorene removed from the list of proposed insecticides, however, at least until our findings had been verified. *They have been verified,* in our laboratory and in several others, and AAF (acetaminofluorene) will never be considered for insecticidal use.

The job that DeEds and his two associates did, as noted above, was pure scientific achievement. It is chronicled in this volume as an argument in this author's effort to chart the difference between scientists and fluoridationists. I insist that even nontechnical citizens, when dependably informed, hardly can fail to detect the difference.

Since, in this chapter, mention is made of the public hearings in 1954 before the (Wolverton) House Committee on Interstate and Foreign Commerce on the Wier bill (H. R. 2341) to forbid fluoridation, this would seem to be a suitable place to quote from the testimony before that committee of Claude N. Palmer, member of the board of directors of the National Committee Against Fluoridation. In the course of his statement, he quoted from an advertising publication of the International Nickel Co., under the caption, "When Metal Bursts Into Flame," as follows:

> Imagine, if you can, an element so fierce it burns up steel. One that claws its way through firebrick . . . makes water burn like alcohol . . . destroys almost everything it touches. That's fluorine for you. And for over 200 years chemists racked their brains to find some material that would hold fluorine. . . . for even a few minutes' study. Numerous materials . . . were tried. Most went up in a flash.

CHAPTER V

Motives?

AT A press conference, February 9, 1959, the official purpose of fluoridation was communicated to newspaper reporters by Arthur S. Flemming, President Eisenhower's newly appointed Secretary of the Department of Health, Education and Welfare, which made him, ex officio, also grand mogul of the U. S. Public Health Service, which is subordinate to HEW.

Secretary Flemming lost no time, after achieving cabinet rank, in notifying the world that "militant action" was about to be stepped up in promotion of fluoridation. The most interesting item in his edict was:

> Controlled fluoridation has been proved over and over again to be an inexpensive and completely safe means of preventing 65 percent of dental decay.

Mr. Flemming's pronunciaiton was self-defeating. It should be obvious to a teen-ager that such a dilution as one part of fluoride to 1,000,000 parts of water could not possibly be controlled in a city's water system. Under the pressure that has to be maintained therein water does not remain stagnant. It must be kept flowing. Some of it, some of the time, would contain no fluoride additive at all. Much of the water would be overdosed much of the time.

Inexpensive? In other chapters of this book the irresponsibly wild extravagance of fluoridation is described.

Alleged prevention of 65, or any other, percentage of collective tooth decay would be no less unreal. How was that particular percentage arrived at? Who measured it? And with what formulae? What was the raw material of the statistic?

So rash an assertion could not fail to compel a reporter who took his work seriously to wonder what must be the real, rather than the pretended, purpose of the fluoridation campaign.

Yet Secretary Flemming's feeble legerdemain (or, perhaps, too credulous acceptance of a bid by minor bureaucrats for official recognition) served, nevertheless, a useful purpose. Its obvious transparence revealed that it did not express the true motive of the fluoridation propaganda. But it *did* arouse curiosity as to what provided the true stimulus.

As an example:

For decades nutritionists had been beating tomtoms for diminished nationwide consumption of refined sugar. Even dentists used to name overeating of sweets as the No. 1 cause of caries. Some of them still do. Sugar rationing in two world wars proved that the less sugar eaten, the less tooth decay occurred.

According to *Tomorrow's Food*, by James Rorty and N. Philip Norman, M.D.:

> About this time the sugar refiners announced their own entry in "the field of food science," in the form of the Sugar Research Foundation, Inc., established June 10, 1943, by some 77 producers and processors of cane and beet sugar in the continental United States, Hawaii, Puerto Rico, Cuba, Canada and Haiti. Its *announced* objectives were to sponsor both pure and applied scientific research in the fields of chemistry, biochemistry, microbiology and medicine; also to disseminate accurate information about sugar.

Among other things, the foundation made grants of money to other organizations to finance research.

In his introduction to *The American Fluoridation Experiment,* Mr. Rorty wrote:

> In the October, 1949, issue of the foundation's publication, *The Sugar Molecule,* its scientific director, Dr. Robert C. Hockett, acknowledged unblushingly that the purpose of the dental caries research was "to find out how tooth decay may be controlled effectively without restriction of sugar intake."

In an editorial published in its February, 1955, issue, the *National Fluoridation News,* referring to Mr. Rorty's quotation of Dr. Hockett's language, said:

> The scientist who works under such a creed violates the very heart of his own scientific ethics; which is the freedom to seek all the facts whether they conform with predetermined theory or not.

So much for the possible financial stake of "big sugar" in fluoridation of public water supplies.

How about other industries?

CHAPTER VI

Fluoride "Interests" Chuckle

Chemical Week is an organ of the chemical industry, which is composed of corporations several of which produce, among other things, fluorides for sale to municipalities for water fluoridation.

Chemical Week, in its issue of July 7, 1951 (more than ten years ago), said:

> Only one percent of the nation's water is now treated with fluorine. *The potential market has fluoride producers goggle-eyed.* Standing to benefit from the boom are chemical companies and equipment firms. [Emphasis added.]

In it's June–August, 1961, issue, *National Fluoridation News* (an anti-fluoridation journal) under the caption WHO GAINS FROM FLUORIDATION? printed the following:

> Many scientific publications, purporting to prove fluoride a harmless "nutrient," carry the following acknowledgment: "The financial support for this (research) work was provided by a group of industrial corporations:
>
> Aluminum Co. of America
> American Petroleum Institute
> E. I. du Pont de Nemours & Co.
> Harshaw Chemical Co.
> Kaiser Aluminum & Chemical Corp.
> Pennsylvania Salt Mfg. Co.
> Tennessee Valley Authority*
> Universal Oil Products Co.
>
> * The $4 billion TVA sells fertilizer, among other things.

These corporations sell fluorides, formerly waste products, in their manufacturing operations which traditionally they have had great difficulty in disposing of. Several of these companies have been involved in costly litigation for poisoning animals or humans due to pollution of air, streams, or herbage with fluorides emanating from the smokestacks of their factories. Other concerns cited as selling fluoridation supplies or equipment to local governments were:

General Chemical Corp.
Blockson Chemical Co.
American Agricultural Chemical Co.
Davison Chemical Co.
Baugh Chemical Co.
Ozark-Mahoning Co.

Chemical Week said:

> Most of these firms are now aiming sales campaigns at municipal water authorities. *It adds up to a nice piece of business on all sides and many firms are cheering USPHS, and similar groups, as they plump for increasing adoption of fluoridation.* [Emphasis added.]

In its running commentary through several issues, *National Fluoridation News* said:

> Sundry universities depend on funds from these industries. Thus it is difficult, if not impossible, for faculty members to voice opposition to fluoridation. Individual scientists have received honoraria for service rendered to corporations trying to evade penalties. . . .
>
> The U. S. Public Health Service has authority to assign or withhold grants at its own discretion. . . .
>
> Fourteen manufacturers of fluoridation equipment were recommended in USPHS Publication No. 62, April, 1951. At least one of them has been activity promoting fluoridation among American Water Works Association members.
>
> Leaders in dental and other societies, parent-teacher associations, Junior Chambers of Commerce, etc., use the

fluoridation issue to rise on the political ladder and gain acclaim. . . .

G. J. Cox, Ph. D., researcher at Mellon Institute, linked with the Aluminum Corporation of America (Alcoa), was first to propound to the scientific world the idea of adding fluoride to drinking water, in the Journal of the American Water Works Association, vol. 3, 1939. [Emphasis added.]

Oscar Ewing, formerly of the law firm, Hughes, Hubbard and Ewing, $700,000-a-year counsel for Alcoa, was, from 1947 to 1952, $17,000-a-year administrator of the Federal Security Agency. In that job he directed seventeen Federal agencies, one of which was the U. S. Public Health Service. He was assistant chairman of the Democratic National Committee, August, 1940 to May, 1942 and was appointed vice chairman of that committee in August 1942. . . .

In January, 1950, a Federal court in Tacoma, Wash., ordered Alcoa to pay damages to a cattle grower, W. M. Fraser, for animals poisoned by feeding on fluoride-contaminated vegetation caused by the dumping of from 1000 to 7000 pounds of fluoride monthly into the Columbia River (*Seattle Times*, Dec. 16, 1952). . . .

Nine corporations, including Alcoa, awarded grants to scientists of the Kettering Institute of Cincinnati, O. The contract between Alcoa and the institute *gave the donor the right to receive research reports for "criticism and suggestion" prior to their publication.* . . . [Emphasis added.]

In May, 1957, H. F. Bonebrake, Alcoa manager of sales, said: "The company does not sell sodium fluoride directly to any municipality." Two months later Mr. Bonebrake said: "We are now selling direct to municipalities, or to anyone who wants to buy, sodium fluoride." . . .

In October, 1957, Alcoa and six other aluminum and chemical companies joined the Reynolds Metal Co. in seeking reversal of a damage judgment awarded to a family on account of poisoning by fluoride fumes discharged from the Troutdale, Ore., plant of the Reynolds concern. . . .

In June, 1958, farmers of Blount County, Tenn., were granted damages for effects on cattle of air pollution by

fluoride from Alcoa's stacks. The verdict was handed down after a trial that lasted 61 days.

As if punishment in courts, of which the foregoing are merely a few samples, had proven inadequate, agencies of the Federal and certain state governments launched legislative measures that could prove costly to corporations continuing to pollute air, water and herbage with fluorides.

So Alcoa and sister corporations appear to have welcomed measures that, instead, would tend to transfer anticipated further, and perhaps augmented, costs to the opposite sides of their ledgers as increased profits.

CHAPTER VII

Dr. Bull Enters the Arena

COMPLETE understanding of the U. S. Public Health Service fluoridation promotion is hardly possible without a down-to-earth view of the antics of Frank Bull, D.D.S., for some years its coach.

In the 1940's and early 1950's Dr. Bull was "a director for dentistry" in the Wisconsin State Department of Public Health. Such functionaries are organized in the Association of State and Territorial Health Directors. The U. S. Public Health Service holds them in tow by means of annual conferences.

Dr. Bull was assigned by the USPHS to coach its satellites on the several state payrolls, at the fourth annual conference, from June 6 to 8, 1951, in Washington, D. C., with the PHS and the Children's Bureau (then in the U. S. Depart- of Labor, but now in HEW)—coach them on how to "sell" fluoridation to local communities.

The PHS had only recently decided to "go all out" for fluoridation. At the fourth conference the prime object was to lay strategic plans. Dr. Bull's task was to brief his fellow "dental health directors" on what to do. He was, so to speak, to train them as barkers for fluoridation's "patent medicine show."

The proceedings became so incredibly outspoken that opponents of the PHS drive strove to obtain copies of the offi-

cial stenographic report. They were unsuccessful. It had been suppressed. However, one member of Congress expressed in action, rather than words, his disregard for the tactics he had witnessed. He snagged a copy of the transcript and smuggled it to the foes of fluoridation. It was nearly reduced to tatters by the thumbing-over that it suffered.

Movie cameras and a sound track would be required to do Dr. Bull full justice, but the following quotations from his recorded admonitions will suffice. He said:

> What are some of the objections?
>
> The first—isn't fluoride the thing that causes mottled enamel (fluorosis)?
>
> Now, we tell them this: that, at one part per million, dental fluorosis brings about the most beautiful teeth that anyone ever had.
>
> And we show them pictures of such teeth. We don't try to say there is no such thing as fluorosis, even with 1.2 parts per million, which we are recommending, but you have got to have an answer.
>
> • • •
>
> And, incidentally, we never use the term "artificial fluoridation." There is something about that term that means a phony. We call it "controlled fluoridation."
>
> • • •
>
> Incidentally, we never had any "experiments" in Wisconsin. To take a city of 100,000 and say: "We are going to experiment on you and if you survive we will learn something from it"—that is kind of rough treatment on the public. In Wisconsin we set up "demonstrations." They weren't "experiments."
>
> • • •
>
> Now, in regard to toxicity—
>
> I notice that Dr. Bane [of the Children's Bureau] used the term "adding sodium fluoride." We never do that. That is rat poison. You add "fluorides."

Never mind that sodium fluoride business. All of these things give the opposition something to pick at and they have got enough to pick at without giving them any more.

• • •

But this toxicity question is a difficult one. I can't give you the answer on it. I can prove to you that we do not know the answer to that one; because we had a city of 18,000 people which was fluoridating its water for six to eight months. Then a campaign was started by an organized opposition on the ground of toxicity. It ended up in a referendum and they threw out fluoridation.

• • •

One thing that is a little hard to handle is the charge that fluoridation is not needed. They talk of other methods and when they get through adding up all the percentages of decay that we can reduce by such methods, we end in a minus.

When they take us at our word, they make awful liars out of us—the research workers.

• • •

You have got to get a policy that says: "Do it." What kind of public health program is it if you say to the community: "If you want to, do it"?

• • •

When we are having the press in, and the public in, don't have anybody on the program who is going to go ahead and oppose us because he wants to study it some more.

• • •

The best technique is the reverse technique; not to refute the thing, but to point out where the opposite is true. When they say: "Yes," you say "No."

Now, where dentists do not seem interested, do not let them stymie you—what we do on an occasion like this is to arrange for the PTA [Parent-Teacher Association] or some group, to ask for some of us to come in and talk about fluoridation. In this way you get in without forcing

yourself, and you can build a fire under the dentist. This is promotional work.

• • •

You have got to knock their objections down.

• • •

The question of toxicity is on the same order. Lay off it altogether; just pass it over.

• • •

Let me tell you the PTA is a honey when it comes to fluoridation. Give them all you've got.

• • •

If you can—I say if you can because five times we have not been able to do it—keep fluoridation from going to a referendum. At the same time, do not tell the people that you are just starting on the fluoridation program in order to promote something else because you are never going to promote anything that comes up to fluoridation in an urban community.

Dr. Glover Jones, of Texas, the record shows, here interrupted Dr. Bull's monologue to report that some 30 or 40 cities in his state, on the point of fluoridating, backed away from it when a research program of the University of Texas was said to have shown that fluoride had worsened the condition of cancer-prone white mice.

"That knocked the pins from under us," Doctor Jones said.

In reply, Dr. Bull said:

I wish I knew the answer. I do not know why they didn't include a letter from two thirds of the deans of dental schools of the universities, saying that fluoridation is a rat poison and should not be used.

You know how we handled it in this rat poison business? We said that it was unfortunate it didn't kill every rat. What do we care what happens to rats? You know these research people. They can't get over the feeling that you have to

have test tubes before you start applying it to human beings.

These fellows [research people] can just take the statements of the ADA, or the USPHS, or the deans of the dental schools, or research workers and they can prove to you that we are absolutely crazy for thinking about fluoridation.

That was more than ten years ago. But in 1961 the Pennsylvania State Department of Health circulated a pamphlet entitled *How to Appeal to the People on Fluoridation—Guide No. 5*. It harmonized so well with Dr. Bull's 1951 instructions to partisans that it is hard to deem it other than a rewrite job.

It advised fluoridation promoters to work on city fathers (aldermen) and on mayors to veto attempts to bring the issue to a (popular) vote; to avoid open debate; to ridicule opponents.

Among other things, the Pennsylvania Health Department's pamphlet said:

Fluoridation is no longer a debatable point. There are not two sides. When you permit the opposition to argue the case with a proponent in public debate you are giving credence to the idea that fluoridation is debatable. . . .

Never let the antis state something against fluoridation and then catch yourself answering them. Keep them on the defensive. Ridicule them. Try to get the people to laugh at the antis.

However, in cautioning campaign speakers to prevent a public vote, the Pennsylvania pamphlet advised:

Do not get pulled into the position where you say you are opposed to a referendum. This is like saying you are against motherhood. It will antagonize people when you say that you do not want fluoridation to be brought up for a referendum. You compound the wrong even more when you say the people cannot decide on scientific issues. You imply the people are dumb.

Fluoridation is a decision for elected officials, the city

> council and mayor. If they do not act on it, they are neglecting their official duties. . . . It is their duty to determine what our water should contain to keep us healthy.

To teen-agers, the Pennsylvania Health Department said, in its *Guide No. 5:*

> You can have a better looking smile. That's what fluoridation can do for you. You won't hesitate to put on a little lipstick to enhance what nature has given you, so why hesitate to have fluoride in the water? It enhances the water and prevents the teeth from going bad. . . .
>
> Whom are you going to believe? Your own doctor and dentist, or some individual who writes an emotional letter to the editor?

Could one reasonably ask for more convincing testimony than the foregoing paragraphs afford in revealing the rowdy approach to public discussion of a serious public question by officials who call themselves scientists?

I think not.

But, apparently, Dr. Bull's influence was not confined to state health department payrollers.

In 1954, three years after Dentist Bull had advised the Fourth Annual Conference on how to parry established facts, camouflage furtive deeds with deceptive words and "build a fire under" balky dentists, the Interstate and Foreign Commerce Committee of the U. S. House of Representatives held public hearings on the unsuccessful Wier bill, enactment of which would have outlawed fluoridation.

One Alex T. McFadyen, then executive secretary of the Grand Rapids (Michigan) Chamber of Commerce, addressed to the committee an intemperate letter of protest saying, among other things:

> We urge the fullest investigation and opportunity for presentation of evidence in favor of fluoridation, and refuting unwarranted, unfounded and *malicious* and false reports of adverse effects.

> The latter have included, falsely, *increased juvenile delinquency, moral degeneration,* heart, brain, respiratory and circulatory disorders and deaths, and other dreamed-up and trumped-up charges, all of which are disputed by the records.
>
> Even *abortions* were alleged to have increased, which is similarly denied by the records. [Emphasis added.]

The record does not indicate that Mr. McFadyen offered any of the "evidence" of which his letter spoke.

CHAPTER VIII

Physicians on the War Path

MANY physicians and some dentists refused to "lie down and roll over" at the behest of the U. S. Public Health Service or the American Dental Association.

These were professional men not deliverable to doubtful causes in return for research grants from the government, from prospecting corporations, or foundations.

In the winter of 1956–57, a large group of them organized what they named the Medical-Dental Ad Hoc Committee on Evaluation of Fluoridation. Its national chairman was Jonathan Forman, M.D., of Columbus, Ohio; its national secretary was A. Allen London, D.D.S., of Boonton, New Jersey.

On February 20, 1957, the ad hoc committee issued a "statement of its position" over the signatures of 660 M.D.'s, 90 graduate dentists, 10 D.D.M.'s (doctors of dental medicine) six holders of the degree Ph.D., and one signatory who did not record his academic degree, if any. Almost overnight, upon its publication, the number of sponsors of this statement grew to substantially more than 1,500 professional men. The language of the document was dignified, in sharp contrast to that of Dentist Bull and his fellow leaders of the PHS campaign.

Among other things, the ad hoc committee published:

We, the undersigned, are opposed to the fluoridation of public water supplies.

As members of the medical, dental, and related public health professions, we are as concerned as anyone about the prevalence of tooth decay and as anxious that it be prevented; but each of us believes that fluoridation of public water supplies is not a proper means of attempting such prevention.

Positive proofs of the safety of fluoridation are required. None has been offered.

The so-called therapeutic concentration of fluoride, arbitrarily established at 1 ppm in drinking water, is in the toxic range.

Dental fluorosis (mottling of tooth enamel) is an inevitable result of fluoridation. The evidence reveals that large numbers of the population may be affected, and with varying degrees of damage.

The determination of whether damage resulting from dental fluorosis is "objectionable" is a matter for the person whose teeth are affected and not for the arbitrary assertion of public officials.

The conceivable role of fluoride as an insidious factor in chronic disease has been evaded by the proponents. A substantial amount of evidence indicates such a possibility. Properly planned long-term studies are required to determine the possible comprehensive association of fluoride with chronic disease.

Fluoridation imposes an extraordinary risk on certain individuals who, by reasons of occupation, environmental circumstances, state of health, dietary habits, etc., are already exposed to a relatively high intake of fluoride.

Fluoridation is compulsory mass medication without precedent. Mass therapy cannot ignore the possibility of mass side reactions.

The function of a public water supply is to provide pure, safe water for everybody; not to serve as a vehicle for drugs.

The role and efficiency of fluoride in dental caries reduction is a matter of active controversy; whatever the outcome, there are less hazardous and more efficient ways of obtain-

ing such benefits as fluoride may offer than by putting it into the public water supply.

Each of the foregoing statements was elaborated in more or less detail in an ensuing memorandum which was specifically included in the ad hoc committee's presentation. Some extracts from that memorandum follow:

> Information from areas having experience with [tooth enamel] mottling reveals its embarrassing effect upon the individual. Thus [H. R.] Roper and [J. G.] Manser, in an article published in *Dental Digest,* in 1941, state: "People having the disfigurement, especially young women, are profoundly humiliated by it. At its worst it is comparable to cross-eyes and harelip. Victims of the stain develop characteristic mannerisms in their effort to conceal the teeth." . . . It is clear that when one's teeth have been disfigured, there is small comfort in knowing that the water that caused it contained only 1 ppm of fluoride and failed to damage the teeth of others who drank it. . . .
>
> Fluoride is cumulative at virtually any level of intake; this, coupled with its tendency to interfere with enzyme and vitamin functions, its known etiologic role in certain abnormal bone changes, and its general propensity to act as a systemic poison, requires the most careful consideration in relation to its potentially chronic toxic effects. . . .
>
> The treatment [of water] must increase, never decrease, the safety of water to its users. The purpose of adding fluoride is not to add to its safety, but to act on the bodies of its consumers. Tooth decay is not a water-borne disease and is not to be combatted by a method that detracts from the safety of the water. . . .
>
> Fluoride is toxic when added to the water and is intended to remain in undiminished potency when it reaches the consumer. . . . The introduction of fluoridation imposes an extraordinary factor of life-long risk associated with the water supply to which the consumer was not previously subjected. . . .
>
> In the unlikely event that a solution containing 1 ppm of fluoride proves the best mouthwash, it can be used as

often as desired, while using nonfluoridated water as a beverage.

The National Research Council of Canada's division of applied biology works on the research of Canada's food sources. The section chief is Dr. Dyson Rose. About half of the work Dr. Rose directs is concerned with milk. After success in the study of freezing orange juice early in the 1950's, Dr. Rose assigned Dr. Marcel Boulet, a dairy chemist, to investigate the behavior of calcium phosphate in milk. Dr. Boulet called upon Mr. John R. Marier, a technician in the food chemistry section, to examine the literature for past reports of calcium phosphate.

As Mr. Marier worked on his investigations he noticed that references to fluoride accumulated. (During this period of several years the fluoride controversy was growing in the United States and to some degree in Canada.) Mr. Marier prepared a paper on the subject that was signed by Dr. Rose and Dr. Boulet. This, after consultation with eminent scientists over a period of more than a year, appeared in *Archives of Environmental Health,* a publication of the American Medical Association, and the official journal of the American Academy of Occupational Medicine, in its issue of May, 1963.

Mr. Marier had started to study the solubility of calcium in milk and later of calcium phosphate in bones and teeth. In the course of his investigations he found that fluorides were involved in the locking of calcium phosphate in bones and in teeth enamel. The pattern of fluoride in the human body became clear.

Nobody had ever contented that fluorides offered any advantages to the human body save possibly in the mouth. There, contacting the teeth, it seemed to tend to reduce decay, in better than half the population under the age of sixteen. The duration of such resistance as is acquired is, however, highly questionable.

But now the Canadian scientists discovered something that had been overlooked. In the United States most naturally fluoridated waters are hard waters containing elements (as many as 500 parts per million of other chemicals) that may produce a protective mechanism that reduces the fluoride absorption into the digestive system and hence its accumulation in the bones, by uniting with the fluorides and carrying them out of the digestive tract as normal body wastes.

The implication seems clear that artificial fluoridation (of soft water) results in far greater accumulation of fluorides in the bones of the human skeleton, with all the inherent danger, than occurs with naturally fluoridated water, for in soft water, there are fewer chemicals to lock with excess fluorides that get past the mouth. Once again man, in tampering with nature's balance, may be setting into action forces he cannot fathom or control.

The Marier report ended with the suggestion that the ionic content of naturally fluoridated waters in relation to skeletal fluoride storage be investigated. To date no action has been taken on this reasonable suggestion.

CHAPTER IX

Symptoms vs Side Effects

READING and hearing about the deadliness of fluorides which, as most science students learn in high school, cannot be kept in glass containers, it could be expected that a layman would ask:

If you drink some, what are the symptoms?

It is the wrong question. The query should be:

What dire effects are to be feared as a result of chronic ingestion of sodium fluoride over a period of years, even in low concentration, diluted in water?

It so happens that one of the members of the voluntary Medical-Dental Ad Hoc Committee on Evaluation of Fluoridation, described in the preceding chapter, wrote what constitutes an answer to the suggested question—in minute and convincing detail.

He is Jacob Baldwin Bruce, M.D., retired. He has a B.Sc. degree from Harvard. His M.D. was from Harvard Medical School. He is a Fellow of the American College of Surgeons (life member since 1925). He is an active member of the American Medical Association.

Dr. Bruce formerly was a staff member of Boston City Hospital, as well as of the Massachusetts General Hospital. He was an instructor in surgery at Harvard Medical School and, prior to his retirement, served as consulting surgeon for the Employers Liability Co. and for the Massachusetts Bonding Insurance Co.

In March, 1961, Dr. Bruce contributed to the National Health Federation, 709 Mission St., San Francisco 3, California, an article for its Bulletin, under the title "Medical Reasons Why You Should Not Drink Fluoridated Water."

It is too long a technical paper for complete quotation, but some of its highlights are as follows:

> Any gradual breakdown in the metabolic processes, as may occur with continued ingestion of fluorine, can start a cancer by the breaking loose of cells which bring about uncontrolled proliferation; but, unfortunately, the individual is not aware, in this early stage, of what is going on. Also the continued ingestion of fluorine can cause the misfunctioning of the chemistry of the endocrine glands with the formation of methylcholanthrene which is the agent that invades cells and converts them into a mass-growth of cancer. . . .
>
> Sodium fluoride in the concentration of 1ppm is nonvolatile and accumulative and its toxic effect depends upon the amount consumed. . . .
>
> Nature has provided symbiosis for all living things, same as is found between man, plant and soil. The community of cells composing the human body are a well-organized system. These different types of cells have certain functions to perform. They are interdependent because, if the cells of the blood fail to transport oxygen, and if the cells of the stomach fail to produce gastric juice, and if the cells of the liver fail to detoxify, then the other organs and cells will die. Without this symbiosis, life would be impossible. . . .
>
> The presence of fluorine over a period of time will inhibit cellular respiration and prevent the individual cells from oxidizing their waste products and when these waste products remain in the tissue they will weaken the surrounding cells, making them less resistant to the process of malignant proliferation, and this is true especially in cancer-susceptible cells. . . .
>
> It is evident that the vitamins play an important part in the very complex interplay of metabolic reactions and any

deviation can upset our defensive capacity. Because continual ingestion of fluoridated water can cause just such an upset, is a reason for advising that it not be taken into the human organism. With a disorganization of processes in cell metabolism there is ill-health and is the first stage in the genesis of cancer. . . .

The greater part of the sodium fluoride added to drinking water must be excreted through the kidneys and, because fluorine has an affinity to attack mucous membranes, *it can create a pathological condition that will lead to ulceration and acute nephritis.* [Emphasis added.] . . .

Fluorine interferes with the oxidation of the purines which will have the tendency to form stones in the kidneys and to cause a high percentage of uric acid in the blood, causing gout and rheumatic conditions. [Emphasis added.] . . .

Fluorine has a very damaging action on the adrenal glands, with inhibition of their hormonal factors. . . .

No woman in a pregnant condition should ever drink fluoridated water because the kidneys are having enough damage absorbing the toxines of pregnancy without the added irritation of fluoride. [Emphasis added.] . . .

The bones of fluoride-fed animals are always chalky and fragile, as are the teeth. This is explained by the fact that fluoride has a very positive and consuming affinity for calcium. Because artificial sodium fluoride water is ingested in the human body, some of the fluoride is retained within the body and some is excreted by the kidneys; and that which is excreted is in the form of calcium. . . .

This is absolute proof that sodium fluoride in drinking water does rob the body of its calcium and causes a deficiency of calcium for normal needs in the bones and tissues. [Emphasis added.] . . .

A hormonal deficiency of the pancreas can cause diabetes. [Emphasis added.] . . .

With an increase in the accumulation of fluorine in the body's tissues, kidney stones have been found to contain large amounts of fluoride, which is caused by interference with the oxidation of the purines.

CHAPTER X

Dentists Reach for the Reins

UNDER date of November, 1952, the American Dental Association issued a 16-page pamphlet with the title: *How to Obtain Fluoridation for Your Community Through a Citizens' Committee.*

Although not spelled out in the caption it was not left secret in the text that the dentists intended to dominate all such "Citizens' Committees."

Blithely ignoring the U. S. Public Health Service (except for a passing reference on page 15) the ADA, on page 2, said:

> The dental society is the group in your community which is best acquainted with the facts about dental health and fluoridation.
>
> Fluoridation is recommended by the American Dental Association and by practically all state and local dental organizations. It is therefore right and proper that dental societies should give maximum aid in the formation of an active Citizens' Committee.

After a few preliminary suggestions, referring to selection of a chairman, the ADA said:

> There is no standard answer as to who will best fill the job. It may be a housewife; PTA (Parent-Teacher Association) leader; church leader; a parent; a former or present

civic official an officer in a civic service club (such as Grange, Rotary, Elks, Kiwanis).

But when suggesting, not for chairman, just mere members of the committee, the pamphlet included Lions and Shriners.

After a few intervening paragraphs on how to enlist support of the press and radio, the following word of caution is offered:

> At no time should the dentist be placed in the position of defending himself, his profession, or the fluoridation process.

Discussing the moment when the committee has readied itself for a "presentation" before public officials, the pamphlet advises (and the indicated emphasis is part of the ADA text):

> Individual members of the Citizens' Committee should meet with civic officials who will be involved in water fluoridation, at a time when full opportunity for discussion is possible.
>
> For instance, in one civic presentation, the mayor gave *thirty minutes* for presentation of the "pro" and *thirty minutes* for presentation of the "con" side of the discussion . . . to be delivered by persons who were *representing organizations*. (The pro side was delivered by the Citizens' Committee chairman and a representative of the dental society.) Following this, any person who wished to speak *as an individual* was limited to three minutes.

But don't argue, advises the pamphlet, as follows:

> At all times avoid controversy, defensive arguments, or criticism of those who oppose fluoridation. They are entitled to their views. The evidence of the benefits and safety of fluoridation far outweighs unsubstantiated arguments in opposition to it. The subject does not require argument, but does need discussion, explanation, and correct interpretation.

Fluoridators do not like referendum elections. They lose most of them. But neither do they like to say so. As the fluoridation promoters in Pennsylvania said in a recent bulletin:

> Don't denounce the referendum. It is like denouncing motherhood.

In similar vein, the ADA pamphlet contains a classic of double talk. On page 8 it says (and, again, the emphasis was placed there by the pamphlet's authors):

> Many communities have passed fluoridation legislation *without public elections*. It has long been felt that public health matters, because of the complex scientific material involved, should *not* be submitted to the voters, who cannot possibly sift through and comprehend the scientific evidence. Nevertheless, the Citizens' Committee should at no time appear to be blocking a final decision to place fluoridation on the ballot, even though it will inevitably mean great expense to the voters. If, however, fluoridation *is* placed on the ballot, the Citizens' Committee will need to redouble its efforts to make sure that all citizens will be scientifically and accurately informed and sufficiently enthusiastic about the benefits of fluoridation that they will make the necessary effort to vote *in favor* of the measure and that they will encourage their neighbors to do the same.

It seems to a bystander that it is more important that the dentists themselves "sift through and comprehend the scientific evidence." And for expense, costs of referenda are small change compared to the cash cost of fluoridation, to say nothing of the long-range costs of wasting disease and funerals.

In its pamphlet, the ADA suggested wording for resolutions of approval and even had the crust to provide the language of a city ordinance for adoption of the mythical "insurance" they propose for "obliteration of 65 percent of all tooth decay."

The pamphlet repeats the PHS promotional slogans "controlled fluoridation" and "fortifying our water" and, as a final blast, it commands:

> Do not let opponents of fluoridation involve you in "mud-slinging" or "name-calling." Never put yourself or the dental society in the position of seeming to "insist on" or "demand" fluoridation.

Mud-slinging! Fluoridationists are its high priests.

CHAPTER XI

Tug of War in New York City

NO ONE need be surprised that the Public Health Service stubbornly refused to endure defeat in Greater New York. It is the metropolis of the United States.

In the spring of 1956 the first all-out effort of the fluoridators was made to capture the giant New York City public water system as their Number One exhibit. Their plan was killed by the disapproval of Arthur C. Ford, then Commissioner of Water Supply, who wrote an official letter stating the firm negative position of his department. In it, he said:

> The addition of fluoride to water supplies is not coupled with the concern of maintaining or improving the quality of the water, or making it safe. No one has suggested that dental caries is a water-borne disease or that water is the cause of dental decay. No satisfactory reason has ever been advanced to show why everyone in a community must be compelled to risk lifelong extraordinary exposure to the toxic action of fluorides, particularly when safer, more effective and more economical ways of administering fluorides for caries reduction in children's teeth have been pointed out and are available.
>
> Whatever the merits of fluoridation, it would not concern us as a department if the question of water supply safety were not involved. But we are concerned and our concern is primarily with the safety of the water supply for each

and every individual of our entire population of eight million people throughout the city.

One year later, the issue was revived, this time more formally. The city Board of Estimate, on March 6, 1957, held a public hearing which lasted thirteen hours, at which 88 witnesses testified—34 favoring and 54 opposing fluoridation. Leona Baumgartner, New York City Commissioner of Health, led the proponents. Water Commissioner Ford was the first witness in opposition. All members of the Board of Estimate expressed opposition but Mayor Robert F. Wagner induced them to (officially) take the question "under consideration."

That was in March, 1957. In September, Superintendent Ford was "promoted" to President of the city's Board of Water Supply. Both jobs pay $20,000 a year, but the board plans and builds public water supply facilities. The Commissioner heads their management.

New York City fluoridation remained under consideration for six years.

A new public hearing was ordered. It opened at 10 A.M. November 18, 1963, and lasted nearly all of that same night. Evidence both pro and con was presented, but it soon became evident the decision had already been made to fluoridate and that no con evidence was going to be taken into account. Thus while the decision was briefly delayed, the City Council, on December 10, to the surprise of no one, directed that the water agencies prepare for fluoridation. The Board of Water Supply was instructed to design and install nine fluoridation plants at a capital cost of $565,000. Operation was expected to begin before the end of 1964. It was estimated that operation would cost $798,000 a year.

A referendum to the voters was not even considered.

Organized foes of fluoridation announced immediate plans to fight the project in court.

CHAPTER XII

Chicago Goes to Court

AT FIRST, fluoridation seemed to encounter smoother sailing in Chicago than it met in Greater New York. The Illinois metropolis had no Water Commissioner Ford to fight back.

Chicago began fluoridating the drinking water of its 4,000,000 population May 1, 1956. Within the following week, four of its citizens, from among the leaders in local opposition to compulsory mass medication, filed suit in the Superior Court of Cook County for a permanent injunction to halt the PHS program.

On July 10, 1962, more than six years later, the court denied the injunction and Chicago's water, as this is written, remains poisoned.

The decision was appealed to higher tribunals and probably will result in the first ruling by the U. S. Supreme Court on the right of any arm of the American government to compel its citizens to drink water containing a deadly poison proclaimed to be medicine.

The appeals will be costly. The moment the case was decided in the lower court, pleas were broadcast for contribution of funds to insure that no possible effort for reversal of the finding should be omitted.

The four petitioners for the injunction were:

Mrs. Alice Schuringa, housewife and mother, a lifelong resident, president of Citizens Against Fluoridation, a nonprofit organization;

Dr. Paul Thorelius, a Chicago practicing dentist;

Mrs. Anna C. Fout, housewife and mother and a public school teacher; and

Walter Olson, a member of the Christian Science Church and an opponent of fluoridation on grounds of his religious convictions.

Each of the four is a citizen, property owner and taxpayer, which includes being a payer of compulsory rates for water contaminated with fluoride. Collectively, the four acted also for uncounted thousands of other Chicagoans equally opposed to fluoridation.

Albert W. and Kirkpatrick W. Dilling were attorneys for the antifluoridationists. The city was represented by Assistant Corporation Counsel William J. Kafke. Trial of the case originally was assigned to Judge Norman C. Barry but he somehow "got lost in the shuffle" and (six years later) it was decided by Judge Samuel Epstein. Judge Barry had deputized Master in Chancery Mayer Goldberg to preside over the taking of testimony.

Although a prime element of the case was that fluoride poisons the water which circumstances compel practically all Chicagoans to drink, no means were devised to circumvent the maddeningly slow process of the courts. The case gathered dust in the files for three and a half years before the first witness testified, then more than another year elapsed before the last witness was heard. Then it was eight and a half months before the master reported to the judge; and another 11 months passed before another than the original judge decided the issue.

It was a battle of fluoridation giants. The petitioners called twelve witnesses; the city thirteen. Hearings were held before the master on 51 days, spread over a period of 411 days. Leading experts testified for each side. The stenographic record, when typed, covered more than 2,900 pages. It is said to have been the most exhaustive judicial investigation ever made anywhere concerning fluoridation.

When Messrs. Dilling, counsel for the petitioners, prepared their final summary of the evidence and their pleadings, their clients published the document in a 139-page book. It may be had by mail from Citizens Against Fluoridation, Inc., P. O. Box 14, Chicago 27, Ill. Proceeds from sales are added to the slender resources of the petitioners to help in the backbreaking task of financing their cause. The fluoridators are hampered by no such dearth of resources. They are amply backed with public money.

On page four of their summary, the petitioners' lawyers say:

> The alleged purpose of fluoridation is to reduce tooth decay in children through administration of fluoride in the water they drink. The fluoride taken in by the child is distributed systemically, a portion reaching the tooth buds before they erupt, or emerge from the gums.
>
> It is claimed that the fluoride incorporated into the tooth enamel during this formative period makes the finally erupted tooth more resistant to decay.
>
> It is not claimed, however, that the fluoride taken in after the teeth are formed and erupted has any effect upon tooth decay.
>
> The sole purpose of fluoridation is thus to systemically administer fluoride to children while their teeth are in a formative stage with the ostensible objective of bringing about enamel in the completed tooth which is more decay-resistant.
>
> Petitioners . . . contend that the method of administering fluoride adopted by the City of Chicago is wasteful and uneconomic and that it cannot properly provide the treatment which is its ostensible objective.
>
> They further contend that the city has not shown that any benefit to the children . . . will result from fluoridation but, on the other hand, that it is certain many children and adults will actually be harmed if fluoridation continues.
>
> Further, petitioners strenuously object to the violation of their legal and constitutional rights as brought about through fluoridation.

The south district water supply of the city was fluoridated on May 1, 1956. On August 1, 1956, the central and north districts were fluoridated. As of the end of 1958, the city had already spent $1,290,703 for capital outlay and operating expenses of the program. Operational costs alone for 1958 amounted to $378,441. These sums, of course, are in addition to water costs prior to fluoridation.

In 1958 the city fluoridated and distributed, through its 4,315-mile system of mains, 367,269,000,000 gallons of water—*a daily average of more than one billion gallons.* To accomplish this doping of the water, *6,115 tons of hydrofluosilicic acid were dumped into otherwise drinkable water. This dosage contained 1,152 tons of* pure *fluoride.*

The rate of average distribution of fluoridated water in Chicago during 1958 was *234 gallons per person per day.*

In their summary, the petitioners' counsel wrote:

> The fluoridated water so distributed was used, not only for drinking purposes, but for all of the other uses to which water may be put.
>
> It is interesting to note that the resolution of the city council . . . specified that steps be taken for fluoridation of the water supplied "for drinking purposes" and did not direct that water for every other use be fluoridated.
>
> Nevertheless, more than 1,000,000,000 gallons of fluoridated water have been distributed each day throughout the system, being employed for such diverse applications as:
>
> | | |
> |---|---|
> | Industrial uses | Washing automobiles |
> | Flushing toilets | Making beer |
> | Sprinkling lawns | Taking baths |
> | etc. | |
>
> • • •
>
> If every man, woman and child in the City of Chicago had consumed an average of one gallon of water per day during 1958 . . . the total daily consumption . . . for drinking purposes would have been only 3,825,000 gallons. The remainder . . . exceeding 891,000,000 gallons per day

> (more than 99 percent of the total) was thus dissipated for . . . other uses, which are in no way connected with the alleged, ostensible purposes of the fluoridation program.
>
> Even the minute percentage (less than 1%) of fluoridated water actually consumed by water users is largely wasted because . . . the greater number of the population are older children, or adults, with fully formed teeth. . . .
>
> The funds expended for this useless fluoridation thus have been inexcusably squandered.

Emphasis thus placed by petitioners' counsel on the "inexcusable squandering" of public money for fluoridation seemed to be a conclusive reply to many years of insistence by the Public Health Service and its lackeys that their proposal was economical.

Similar gashes were torn in other items of the fluoridation propaganda. Dr. Philip Seuss, one of the city's expert witnesses, under cross-examination, was asked:

> Doctor, is there any way you know of to regulate the dosage of fluoride at a 1 ppm concentration?

This tried the patience of Master in Chancery Goldberg, who was presiding. He interrupted:

> No, he can't, Mr. Dilling. There is no question; the more you drink, the more fluoride you take in.

(One of the favorite terms the fluoridationists continually advance to describe their "patent medicine" for decayed teeth is "controlled fluoridation.")

Another city witness, Dr. J. R. Blayney, of the Evanston (Illinois) fluoridation project, under cross-questioning, was compelled to admit that peas, cooked in water containing 1 ppm of fluoride, would themselves contain more than four times as much fluoride as peas cooked in unfluoridated water; tomatoes three times; carrots nearly five times.

Drs. Frederick B. Exner and George L. Waldbott not only testified for the petitioners but stood by and, on technical

details, advised the lawyers throughout cross-examination of the city's witnesses. The result was shattering. PHS experts fumbled with their expertise and were reduced to admissions so damaging as to make hearers wonder if their ears might not need attention.

For example:

H. Trendley Dean was one of the rather numerous "fathers of fluoridation." From its organization in 1931 until 1953, when he retired, he was the director of the National Institute of Dental Research, a bureau of the U. S. Public Health Service. From then until 1959 he was secretary of the council on dental research of the American Dental Association, organization "Man Friday" of PHS. In May, 1960, Dentist Dean testified in the Chicago trial in behalf of the city.

The literature of nutrition teems with evidence that calcium is essential to man as a source of growth and health of the bones and teeth. During cross-examination under coaching by Drs. Exner and Waldbott, Attorney Dilling asked Dr. Dean:

> Doesn't calcium have something to do with the building of good teeth?

Dean's reply electrified the hearing chamber. He said:

> *It is so stated. I don't know of any clear-cut evidence of that.* [Emphasis supplied.]

Such incidents as the foregoing are too numerous in the hearing record to bear repetition herein. That record also describes how the two Dillings (counsel for the petitioners), by cross-examination, caused city witnesses, summoned as experts, to admit errors in research projects that they had not mentioned in their direct testimony.

Dr. Samuel Andelman, Chicago Health Commissioner, presented statistics to show that deaths per 100,000 of Chicago's population from heart ailments, cancer, vascular lesions and nephritis had decreased during a period includ-

ing the years of Chicago fluoridation. His figures were based on an estimated *increase* of population. But the case was so prolonged that before it ended the 1960 census had been completed and it was shown that Chicago's population had *decreased*. A result was that Dr. Andelman's statistics showed the opposite of what they were compiled to prove.

Notwithstanding the fact that, after many attempts over a number of years, the opponents of fluoridation had forced their adversaries into 51 days of public hearing on equal terms under court rules and had torn the PHS presentation (in support of the municipality) to ribbons, the master in chancery, on August 24, 1961, submitted to the presiding judge a report unfavorable to the petitioners.

Yet the antifluoridationists expressed themselves as not downhearted. They expected the summary of the case, as prepared by their lawyers, to be the most effective of their many publications.

CHAPTER XIII

Engineers Hate Wreckage

JAMES RORTY, in *The American Fluoridation Experiment,* describes how the "scientists" undertook to add this nation's water engineers to their group of enterpreneurs —and failed.

He narrates that, in 1949, A. P. Black, professor of chemistry in the University of Florida, aided by H. Trendley Dean, of the U. S. Public Health Service, who was mentioned in Chapter I, talked the American Water Works Association into "endorsing" fluoridation at its annual convention. Dentist Dean also was connected with the AWWA, as well as the PHS, which kept him quite busy.

Black and Dean each deemed himself "father of fluoridation." Others also aspired to the same doubtful distinction. Dean was not the originator of the new mass medication. Gerald J. Cox, a researcher at the Mellon Institute, first suggested fluoridation in 1939, but Dean had wangled himself into the position of what might be called generalissimo of the PHS and ADA army.

As a fact, the 1949 AWWA resolution said little—merely that water system managers might go for fluoridation *in communities where strong public demand had developed and the procedure had full approval of local medical and dental societies, local and state health authorities and others responsible for communal health.*

But the joint "fathers of fluoridation" had won only a consolation prize. The elaborately qualified resolution that they had cajoled into adoption has since boomeranged into a spur to water engineers to join the ranks of the anti-fluoridationists, and their contribution is invaluably descriptive of extensive and expensive damage done to water tunnels, mains, service pipes and pumping machinery by fluoride. It similarly attacks equipment of industrial water consumers; laundries, for example.

The words of Benjamin C. Nesin uttered at the 1956 conference of the Maine Water Utilities Association are not exceptional. They are typical of men bearing heavy responsibilities and possessing strength of character to meet them.

The engineers do not want, nor do they intend, to deserve blame for wrecking millions of dollars' worth of equipment entrusted to them for efficient operation.

They do not want, or intend, to kill or cripple anyone.

It is their duty, above all others, to *prevent* drinking water from killing or crippling anyone.

Typical expression of resentment by the water engineers at the tactics of the PHS and ADA was the fearless conduct of Superintendent Edmund Sargent, of the water system of Wilmington, Massachusetts, a small municipality that had endured fluoridation for seven years and was about to decide by referendum whether or not to kick it out.

Under date of February 28, 1962, Superintendent Sargent "took the bull by the horns" and publicly bade the voters reclaim their public water supply, as follows:

> To My Fellow Townsmen:
>
> As Superintendent of Wilmington's water system, it has been my responsibility to add sodium fluoride to our water since 1955.
>
> Having had close contact with this toxic material, and feeling a deep concern for the people of Wilmington, I am compelled to report to you on this situation before you vote

next Saturday on whether or not to continue fluoridating our water supply.

Since installation of the fluoridator at the pumping station, there have been a series of breakdowns of that equipment due to corrosion of the metal parts. I have been asked how much longer it will be before the same thing happens to pipes, meters, hot water tanks and household plumbing, even though the concentration in the fluoridator is much stronger than in the system. It is my duty to report that I have already observed an increase in corrosion throughout the town since we started adding fluoride to our water.

I must also notify the townspeople that it has been impossible to maintain the recommended 1 part per million. This is the concentration which we add to the water at the pumping station; but tests of fluoride in the lines have fluctuated from 0.4 to 1.4 parts per million, the latter being dangerously close to 1.5 ppm which, according to the U. S. Public Health Service, makes the water unsafe for drinking purposes.

In view of these facts, I would urge the voters of Wilmington to consider carefully whether or not they wish to continue adding sodium fluoride to the public water supply.

Personally, it is my conviction that the water system should be used for the sole purpose of supplying pure, potable water; and the furnishing of sodium fluoride and other drugs which have been suggested for mass medication through the water mains should be left to other, more appropriate, agencies.

The election was held March 3. Fluoridation was ordered abandoned by a vote of 1622 to 701, or substantially more than two to one.

In 1951 and again in 1956 a *group* of trustees of the New Jersey section of the American Water Works Association sent to the Board of Health of that state an outspoken report of its nine-man committee on fluoridation. The report recommended a "go slow" state policy to consist of a number of specified items, among which were:

In case of insistence on fluoridation, place it in the hands of trained and specially licensed technical water operators.

Make arrangements for special financing.

Strictly enforce all requirements of the State Health Department.

Fully explore alternative methods of supplying fluorides to those who wish to take them.

Study possible deleterious effects on water consumers.

Require from the [state] attorney general "an opinion as to who would be responsible for real or alleged damages or losses to persons, material, or industrial processes due to fluoridation."

Scant heed seems to have been given the water engineers by the State Health Department. *The engineers waited for five years.* Then Secretary C. B. Tygert, of the Newark (New Jersey) section of the AWWA, under date of May 7, 1956, addressed a communication to Daniel Bergsma, State Commissioner of Health, which contained another copy of the 1951 report, and said:

> *Until such time as you can make available the information asked for . . . we are constrained to oppose the addition of fluorides to public water supplies.* [Emphasis added.]

To insure adequate understanding of how earnest the engineers were in their repulse of fluoridation, a few additional sections of their 1951 New Jersey report are quoted as follows:

> Introduction of fluorides into the public water supply embraces a new field of endeavor and, if universally adopted, represents a departure from the long-established principles and practices of the waterworks profession. . . .
>
> If the opinion of the water works operator is at variance with that of the medical and dental professions on this subject, it should not lightly be concluded that he is behind the times or is arbitrarily resisting the promotion of the health and welfare of the public. . . .

> The process (fluoridation) is inefficient—99.5 percent of the chemical is wasted. . . .
>
> In large and complicated waterworks systems, numerous mechanical installations would have to be operated to treat all of the water; and if all of the water is not treated, the procedure would be of little benefit.

Merely as examples, there are cited here a few instances, culled from hundreds, of fluoride damage to waterworks equipment and the impossibility of maintaining the 1 ppm concentration approved by the PHS and ADA.

As reported in the April, 1956, edition of *National Fluoridation News,* Public Works Director James Devlin, of Pittsburgh, Pennsylvania, issued a news release saying that seven months after fluoridation began in that city the desired level (1 ppm) had not been reached despite "dumping of more than enough of the chemical into the raw water." He added:

> Somehow, somewhere, the material is being held in suspension. The city has been moving slowly lest some of the trapped fluoride escape suddenly and swamp the drinking water with an excess of chemical.

The Schenectady (New York) *Gazette* of January 18, 1956, reported that fluoridation had been interrupted by corrosion, adding:

> In the past six months the equipment has been operating only three days.

The water department of Concord, New Hampshire, sent to one of New York City's water department laboratories eight tubercules of rust found in one section of pipe. They yielded fluoride levels ranging between 900 and 2,800 ppm. A ninth one from another pipe section contained fluoride at 3,600 ppm as related to water (3,600 times the dosage recommended by the Public Health Service).

At New Britain, Connecticut, a broken dissolving-chamber

device in a fluoride-feeding chamber caused suspension of the process, according to the New Britain *Herald* of March 7, 1957.

When a water main burst in San Francisco, California, it was found lined with rust charged with fluoride at a level of 6,000 ppm.

Mayor J. S. Johnson, Jr., of Fulton, New York, complained that three years of fluoridation had caused "great increases in repairs."

In Dade County, Florida, one service company had to replace 5,000 leaky water heaters during four years of fluoridation.

A refrigerator service concern reported that in Astoria, Oregon, parts had to be specially treated every few months; whereas no such steps had to be taken at Long Beach, Washington, or Seaside, Oregon, where water was not fluoridated.

Sheridan, Wyoming, suffered an "epidemic of burst pipes and tanks" and its motorists had to cope with damaged automobile radiators.

Woonsocket, Rhode Island, had to abandon fluoridation in 1959, after two years' trial, because of damage to valves and pumps.

Providence, Rhode Island, experienced trouble because of imperfect dilution of fluoride before it reached the city's pumps.

CHAPTER XIV

PHS in World Evangel

NOT satisfied with trying to inflict compulsory mass medication of public water supplies on the American people, the U. S. Public Health Service sent staff members and U. S. tax dollar subsidies abroad to spread its pseudodox gospel to the whole world.

The effort, of course, embraced enlistment of the World Health Organization but (also of course) that branch of the United Nations was a pushover. The effort did not stop there.

One cannot help wondering about the real motive behind this elaborate missionary venture. It hardly seems realistic that it should have been (let us say) a drive by the PHS at extension of mere pomp and power. Nor would one expect to find that effort included among its ambitions for abstract leadership in one-worldism.

To be sure, elevating fluoridation to universal status could vastly expand the market for sodium fluoride and for apparatus with which to apply it and hold in partial check its contaminating unruliness. But the PHS surely could be relied on to deny that so base a motive could have actuated it.

Whatever the motive, the world program proved to be a dud except for the Uriah-Heapish response of WHO—and its effectiveness bore little relation to its noisiness.

In his introduction to the Exner-Waldbott book, *The*

American Fluoridation Experiment, James Rorty, its editor, suggested that the fluoridation program had made little headway abroad.

In 1955, the dentists of France, at their annual convention, voted against it after the Institut Pasteur and the Ministry of Health had failed to approve it.

Switzerland was going slow as a result of experiments which indicated that fluorine might aggravate thyroid imbalance in persons suffering from goiter.

In the February 12, 1955, issue of the *British Medical Journal,* Dr. Hugh Sinclair, director of Oxford University's Laboratory of Human Nutrition, had declared that "the Health Ministry's plan to put chemicals called fluorides into drinking water may poison millions of people."

Among the reasons stated by the French dental society for its action was that fluoridation would be compulsory medication of such nature as to be contrary to human rights and that no government should possess the power to order it.

France, Italy, Norway, Denmark, Russia and India refused to sanction fluoridation of public waters.

In Great Britain, Belgium, Switzerland, and New Zealand there had been experiments on a trial basis.

The struggle over fluoridation became a battle royal in Sweden. A year or two ago that nation's Supreme Administrative Court unanimously ruled that experimental fluoridation of public water supplies in Norrköping, a seaport at the head of a long inlet of Norrköping Bay, with 84,000 inhabitants, was unlawful and "must be stopped immediately."

Within less than a year the Swedish parliament enacted a new law authorizing Swedish communities to fluoridate if they wished to.

Then the Swedish scientist, Dr. Hugo Theorell, winner of a 1955 Nobel Prize for his work in the field of enzymes, in a report to the Royal Medical Board of Sweden said, "Even if the experiments so far carried out with the fluoridation of

water have scarcely given grounds for all too great fears of chronic water poisoning, one must, in connection with water fluoridation on a very great scale, reckon with unfavorable results in *a certain number of individuals*." (Emphasis added.)

Dr. Theorell went on to say, "It strikes the undersigned as in principle wrong to open up possibilities for a majority decision in a body of laymen to be able to impose upon all individuals in a municipality the consumption of a water that is not 100 percent guaranteed harmless. It may be objected that the advantages of a reduced caries frequency would nevertheless outweigh the disadvantages. This argument implies that one should force some people to risk something of their health to improve that of others. . . ."

"Equally good or even better alternatives than water fluoridation (A) exist in the form of either local application of fluorine preparations (B) or the administration of fluorine through other vehicles than water (C)."

Following Dr. Theorell's report the Swedish government refused to permit general mass fluoridation!

The U. S. Public Health Service horned into this foreign dispute with a $44,000 grant of American taxpayer money to be spent by Professor Ingve Ericson, the most powerful fluoridation promoter in Sweden, according to announcement in May, 1962, by the government-controlled Swedish radio. Added to $60,975 similarly contributed in 1959, this brings to $104,975 the total, as of 1962, of Uncle Sam's financial pressure to cause Swedes, in their own country, to submit to specific compulsory medication of their drinking and cooking water.

In declaring the old law invalid as of December, 1961, Sweden's highest tribunal, which only parliament can override by legislative enactment, declared that:

> Adding of fluorides to the public water supplies is not done in order to purify the water, or to make it, in any

other respect, more fit for drinking and cooking purposes.

The possibility cannot be excluded that fluoridation may involve certain risks to the health of consumers.

The way in which water is supplied to the community makes it impossible for anyone to avoid using such water should he wish to do so.

The Norrköping experiment was the only public fluoridation project in Sweden. In 1955, after it had been in progress for three years, the Royal Swedish Health Board, which corresponds to the Public Health Service in the United States, issued a warning, officially reporting to the Swedish government that it did not find that the absolute safety of fluoridation had as yet been established. Its suggestion was ignored.

Three years later, in 1958, the Royal Health Board proposed that a law be passed to permit a local community to fluoridate if it so chose.

This proposed legislation fell by the wayside because of popular resistance.

Technically, in its 1961 decision, the Swedish Supreme Administrative Court ruled that Paragraph No. 3 of the sanitary code must be applied. That paragraph provides that the Country Administration concerned "shall see to it that appropriate measures are taken for removal of such sanitary anomalies as have come to its knowledge."

It must be borne in mind that the U. S. Public Health Service has not tried, by bare Federal fiat, to compel American communities to fluoridate. But the PHS deserves little credit for not attempting that obviously impossible tactic.

Instead, it has propagandized local health officials and/or mayors and city or town councils to embrace its program and, to that end, has applied pressures high and low, behavior polite or boorish to suit the occasion, dialectic, ideology—in fact the whole gamut of political sanctions and cajolery; throwing dignity out the window and barefacedly putting science to shame. And, through it all, its ADA and other understudies have diligently demanded that, under no cir-

cumstances, should municipal nabobs permit submission of the proposed policy directly to the voters by referenda.

In 1955, the PHS asserted that 1,095 American communities, with estimated aggregate population of 28,000,000, were fluoridated. That figured down to an average population of 25,571 per fluoridated community.

But by that date organized opposition had developed and 500 cities and towns, comprising 40,000,000 people, had either initially rejected fluoridation or abandoned it after trial. These rebelling communities had an average population of 80,000 each. Population-wise they were more than three times the importance of the hamlets with a sprinkling of, mostly, lesser cities that "took fluoridation lying down."

And a large majority of those rejections were by referendum, proving that Dentist Frank Bull at least knew his political onions when he told the fourth annual conference of his fellow state dental directors in 1951:

> If you can—I say if you can because five times we have been unable to do it—*keep fluoridation from going to a referendum.* [Emphasis added.]

CHAPTER XV

A British Scholar Speaks

IN 1954 the United Kingdom of Great Britain dispatched an official mission to the United States to inquire into fluoridation. Subsequently, following submission of the mission's report, the British Ministry of Health designated centers for what it called demonstrations of fluoridation. The centers, with 386,600 combined population, were:

Norwich: 121,200
Anglesey, Wales: 50,600
Kilmarnock, Scotland: 42,100
Watford, Hertfordshire: 73,100
Darlington, Durham County: 84,900
Andover, Hampshire County: 14,700

This fruit of the U. S. Public Health Service foray into attempted world leadership was, for it, not too fortunate.

The British "demonstration" centers refused to demonstrate. Their story was told by Geoffrey Dobbs, Ph.D., A.R.C.S. (Associate of the Royal College of Science), microbiologist at the College of North Wales, Senior Lecturer at the University of Wales, formerly at King's College, University of London.

Dr. Dobbs wrote an article entitled "Fluoridation—a Study in Confusion of Function." It was published in the May, 1957, number of *Water & Water Engineering*, the leading British journal concerned with water technology. Parts of it

are quoted here. Indicated emphasis was added, for not the least of the article's value is its lack of anything resembling tub-thumping.

In view of the rowdy tactics of the American Dental Association and other spokesmen for the USPHS, the dignity and reserve with which its author has written may well be considered its prime contribution to public understanding of a very serious subject.

Dr. Dobbs wrote:

> The basic studies by Trendley Dean of the U. S. Public Health Service were published . . . *and do not seem even to have been subjected to the process of critical scientific examination which would normally follow publication of original work with controversial implications* in ordinary professional or scientific journals.
>
> The promotion of the project from the start has, in both countries, depended upon the influence of government departments and has proceeded by means of organized "endorsement" on the part of professional and other associations and public bodies, none of which has had the "cons" of the matter placed before it on equal terms with the "pros."
>
> At the time of writing [1956?], so far as the writer [Dr. Dobbs] knows, no single article or scientific paper has yet appeared in a British technical, scientific, or professional journal, which examines the fluoridation proposal from the point of view of someone primarily concerned with the protection of the public health as a whole rather than with the reduction of dental caries. . . .
>
> It is fairly easy for permanent officials, by abandoning their position of impartiality, to persuade the appropriate committees to adopt the proposal after having heard one side, only, of the controversy. . . .
>
> There is, however, a heavy price to pay for this in loss of confidence in the impartiality and integrity of the officials mainly responsible, usually the medical officer and the water engineer, who now become identified with a successful profluoridation party . . . and are regarded with distrust by those who do not share its views. . . .

It is clear that informed criticism ought to be presented *before* the decision is made, not *afterwards*.

Dr. Dobbs then proceeds to discuss the "demonstrations" established by British Ministry of Health and the popular opposition they triggered. He said:

The one thing which has been "demonstrated" beyond doubt is the existence of widespread objection to the use of the public water supply in this particular way.

In Norwich the council turned down the Ministry's invitation; in Anglesey, two district and two parish councils passed resolutions of protest; in Kilmarnock, Watford, Darlington and Andover, public meetings of protest have been held, and in the last [named] three places, a total of about 14,000 people have signed a document called "The Voters' Veto" in which they specifically withhold their consent from the putting of fluorides in the water supplied to their homes.

Only in Darlington, where a local doctor was allowed to address the General Purposes Committee of the Council for ten minutes, has any trained or qualified critic of fluoridation been given a hearing by the Council and Darlington later rescinded its decision to fluoridate.

In Andover, and to some extent in Anglesey, people have been using or providing their own water supplies, in some cases sinking bores and opening up old wells. Even in Watford one, at least, of the objectors has been cycling some miles every week to fetch unfluoridated drinking water for his family, while at the same time the medical officer of Hendon has been sending for fluoridated water from Watford to give to his infant son. . . .

A profound confusion of functions is a fairly obvious feature of this unwholesome situation. The mechanisms of local democracy are totally unfitted for making this sort of decision, which ought to be outside the field of "politics" altogether, and within the field reserved to private judgment and freedom of choice of the citizen, with or without the technical advice of his own doctor or dentist. . . .

> The unique importance of water as a necessary of life makes the perversion of function involved in the use of the public water supply for a specialized purpose, such as preventive dentistry, peculiarly dangerous and undesirable; and the public is entitled to some protection by those whose professional responsibility it is to see that the water supply is not tampered with.
>
> A public water supply is a general utility, and once it begins to be "doctored" to suit special interests, whether medical or industrial, whether to treat one part of the body or serve one section of the community, it must inevitably become less suitable for its main uses. . . .
>
> It is not even certain that the process of mass-dosing a population with a "health" additive is legal. . . . But whether it is actually illegal or not it is certainly regarded by many people as objectionable and unethical, and it involves a water department in a most undesirable situation, as well as placing upon it a heavy responsibility of a type quite alien to its function.

Taking issue with a statement, in one of its reports, by the British Ministry of Health that "the fluoride ion, which is the effective form of fluoride, is the same whatever the exact salt used for fluoridation," Dr. Dobbs calls it *"a glimpse of the obvious which is impressive only to those who have no idea what ions are."*

The author calls attention to another comment by the Ministry, in the same report, that fluoridation should (1) not be described as mass medication; (2) what is proposed is to make good a deficiency in those water supplies which (3) lack this beneficial element.

The allegation that lack of fluoridation is a deficiency in a water supply is characterized by Dr. Dobbs as a "thoroughly tendentious phrase [which] implies that the accepted purpose of a public water supply is prevention of dental caries in children." He adds: "In no other sense can an ordinary water containing less than 1 ppm of fluoride be said to suffer a deficiency." He enlarges on this comment as follows:

We are to assume that the human body has evolved to its present state upon a water supply which is mainly deficient in one of its needs and, since the pre-emergency effect of fluorides upon the teeth (before they are "cut") is said to be the most important, we are to assume that the maternal body creates a similar deficiency in the combined food-and-water supply which it offers to the developing baby.

If this sort of reasoning is accepted the door is open for its application to any substance which becomes fashionable in public health circles and which occurs in trace quantities in natural water.

It should be stressed that the fluoride ion has no known biological role in the human body.

Dr. Dobbs proceeds to buttress the latter declaration by example textbook quotation, and continues:

Despite this, the lay public and [British borough] councils are told by medical officers that *"fluoride is one of the trace elements which the body needs for its nutrition . . . and, indeed, a local paper, reporting this same conference, attributed to the 'experts' present the statements that 'One would starve to death on a fluorine-free diet' and that fluoridation 'would stiffen up the bones of older people to reduce fractures and combat physical sepsis generally.'" Despite protests, these wild speculations have remained uncorrected by their alleged authors.*

The causes of dental caries are by no means fully understood, but it seems agreed that the disease is mainly due to the fermentation of carbohydrates on the tooth enamel.

This has nothing to do with the water supply, and reduction of 50 percent in caries have been shown merely for toothbrushing and mouth washing after meals. . . .

The fact is that no one at present knows how the fluoride produces its dental effects and until this is known the best method of administration must remain uncertain.

There is no evidence that fluoride in the water supply is essential for sound teeth, and it may well be that the fashion in fluoridation is on the way out, though its early departure is likely to be delayed by the heavy commitment of official

prestige. . . . To impose the wholesale administration of fluoride in the present state of knowledge seems to be peculiarly irresponsible.

Dr. Dobbs winds up his case against fluoridation of public water supplies with a broadside against the third point urged by the British Ministry of Health; namely, designation of fluorides as *"this beneficial element,"* saying:

As an unqualified description of the fluoride ion in an official document, this is scarcely conducive to confidence. All the literature about fluorides, with the sole exception of that dealing with the caries effect, is concerned with their toxicity. So far as known they are toxic to all forms of life. Properties which suggest danger are enzyme inhibition and calcium activity. . . .

It is important also that sodium fluoride is widely known as a commercial poison, commonly used for such purposes as poisoning the dry-rot fungus in timber, de-worming pigs, de-lousing poultry, and as a constituent of insecticides and rat poison.

The *chronic* effects of fluorides are equally notorious.

The diagnosis of very low-grade chronic poisoning is at best extremely difficult owing to the generalized nature of the symptoms, *and to put a highly toxic substance at low concentration in the public water supply is probably the best possible way of insuring that any damage it may cause shall be indistinguishable.*

Let us suppose that some such symptoms as "shortness of breath" or "localized rheumatic pains" are increased by 5 percent, who could possibly establish the fact? There has always been a large amount of chronic ill health as well as fatal disease of unknown origin and, at the present time, some of the major chronic diseases are on the increase. The causes are certain to be complex, *but the intake to toxic substances in food, drink and air is undeniably under suspicion as being among them.* . . .

What is so thoroughly alarming about this affair is the attitude taken up by officials upon whom the public relies for the protection of its health.

Medical reports are now beginning to come in from the U.S.A. of recognizable signs of incipient fluoride intoxication in some sensitive people in the fluoridated districts. It should be obvious that there will be difficulty in establishing such diagnoses with certainty, but the existence of such reports by reputable medical practitioners ought to be placed on record as at least an additional reason for caution. *On the contrary, they are ignored unless brought up by opponents of fluoridation, when they are treated with hostility and derision.* . . .

It should be noted that, although the Medical Research Council has admitted some possibility of untoward effects, the Ministry is ignoring the United Kingdom Mission's recommendation that the proposed studies should "include full medical and dental examinations at all ages," and is restricting itself to dental examinations of children, which no doubt will "demonstrate" what is desired for the promotion campaign without bringing to light any unwelcome observations.

The incredible fact is that no studies involving medical examinations of adults in artificially fluoridated areas have yet been undertaken ANYWHERE. . . .

It is really horrifying that the health of large populations should be hazarded upon such a foundation.

Here again we have a further confusion of functions in which those responsible for protecting the public health impose a speculative risk upon it, placing the onus of presenting the critical case and producing evidence of injury (under circumstances which almost preclude certainty) upon private individuals.

If anything, the situation ought to have been reversed. If some private enthusiast had put up the idea of fluoridation as an attrative short-cut to dental health, it should have been the duty of public health officials to take the broader and more responsible view which has been attempted (however inadequately) in this article.

The motive of reducing dental caries is, of course, estimable but quite subsidiary to the care of the public health as a whole, within which framework all such fractional ob-

jectives ought to be pursued: *and, moreover, could be pursued with far less social friction and far greater effectiveness.*

Dr. Dobbs'*article is by no means the last opposition to fluoridation voiced in Great Britain where the medical profession and its journals have been far more cautious in their acceptance of the claims of fluoridationists than have their American counterparts.

The distinguished British medical publication *Lancet* pointed out in an unsigned editorial article in its August 20, 1960, issue that deaths from stomach cancer in Utah County, Utah, were 2.4 percent of deaths studied while those in Colorado Springs were 28.8 percent in the same years! The water in Colorado Springs contains 2.5 parts per million fluoride and that in Utah County 0.5 per million fluoride. Obviously, the editorial commented, while these figures are not conclusive they should serve as a warning that further research is necessary before we fluoridate our water supply.

And in the October 26, 1963, issue of the *British Medical Journal,* organ of the British Medical Association, a chilling note was introduced into the fluoridation question by a letter from Dr. Roger Berry, an Oxford radiobiologist, and Wilfred Trillwood, director of pharmaceutical services for an Oxford hospital group. Carefully pointing out their experiments had been carried out in a "test tube" environment and did not "necessarily" mean fluoridated water was unsafe, the writers of the letter reported that their research had indicated the presence of sodium fluoride in water in as dilute a concentration as 1/10th of 1 part per million appreciably slowed the rate of growth of human cells.

A storm descended on the heads of the two scientists who pointed out to critics their main line of research concerned ionizing radiation and cancer, but who, significantly, called for full pathological examination in properly equipped laboratories to uphold or contradict the safety of fluoridation. As Dr. Berry wrote subsequently, "At the present time I fear there is too much we do not know."

CHAPTER XVI

PHS Hires "Madison Avenue"

THE next time you visit your dentist, ask him if he subscribes to *Dental Survey*. When I did so, my dentist pointed to a pile, nearly a foot high, of that pocket-size publication and said: "I do not. They send it to me free and hope I'll read the ads it contains."

I borrowed his copy of the issue dated March, 1961. Its title page said that it was published monthly at Minneapolis, Minnesota, by Dental Survey Publications, Inc., and that its subscription rate was $6 a year. It listed addresses of advertising representatives in four cities. The number I examined had 136 pages, expensively printed on heavily coated glossy paper. Most of the advertisements were in color.

Its masthead, in the middle of the book, proclaimed it to be the "official journal" of the Pierre Fouchard Academy and named its purposes as:

> To collect and disseminate the experiences of those engaged in the practice of dentistry; to make available to all dentists the advances of science in the newer techniques of dentistry.

Of the 136 pages in the March, 1961, issue, 53½, or 39 percent, were devoted to "reading matter" and 82½ pages, or 61 percent, to advertisements of dental supplies and equipment. (Presumably this was in compliance with the post office rule limiting advertising to 60 percent of the contents

of a publication that is to enjoy the low second-class postage rate.

To my journalistic eye it appeared to be a well-edited trade paper (not implying that dentistry is a trade rather than a profession); not an agonized torchbearer for fluoridation, as the American Dental Association most emphatically is.

For example, its up-to-the-limit advertising volume (contained in the March, 1961, issue) included not a single ad for sodium fluoride, or fluoridation equipment. And a book review of a work dealing with fluorides left nothing to be desired in objectivity.

This apparent freedom from fluoridation bias made all the more impressive the leading article, which was headed WASHINGTON REPORT, with the subcaption *Behind-the-Scenes News from Dental Survey's own Capital correspondent*. The first item in this correspondence was titled "Push for Fluoridation." Under this title *Dental Survey* said:

> Washington, D. C.—U. S. Public Health Service soon will set up a new section with the responsibility of informing the public about all available health services. One of its major tasks will be to sell the country on the need for fluoridating community water supplies as a protection against caries.
>
> Word that the new operation was on the way came from Rep. John A. Fogarty (D., R.I.) at a Washington dinner of Alpha Omega Dental Fraternity at which Fogarty was presented an achievement award by the fraternity "for meritorious contribution to dentistry and its allied sciences." As chairman of the appropriations subcommittee that handles dental and other funds for the Department of Health, Education and Welfare, Fogarty for years has been the most influential House member on health legislation.
>
> Fogarty said the new branch, or bureau, would make use of "all modern communications media now used to promote commercial products."
>
> *In other words, it will be a high-level public relations*

promotion and lobbying organization, charged with making the general public aware of all proven health services, such as water supply fluoridation. [Emphasis added.]

The Congressman cited the Salk poliomyelitis vaccination campaign as a movement that succeeded because it was forcefully and skillfully promoted, in contrast to the "lagging efforts" to "sell" cities on value of water fluoridation. . . . Fogarty added:

"In last November's elections, in almost every community where a fluoridation referendum was held, the majority of citizens elected to deny their children this important health protection. No one can benefit from a new health measure unless the majority elects to enjoy its benefit." [Emphasis added.]

Representative Fogarty and the Public Health Service were announcing dependence on the "hurrah boys" of Madison Avenue to "bring home the bacon" of fluoridation despite the fact that in almost every community where a referendum was held the voters repudiated it.

CHAPTER XVII

Scientism and How a Scientist Behaves

LANGUAGE never stops growing. Meanings of words change continually. "Silly" once meant "holy." "Beam" once meant "tree" and vice versa.*

Until 1961, publication date of the third unabridged edition of Webster's New International Dictionary, *scientism* (if the lexicon pundits had done their work thoroughly), at least in this country, meant:

> The methods, mental attitude, doctrines, etc., characteristic of scientists.

But, within the last forty years, or so, again at least in this country, the same word has come to mean something very different.

In 1960, a round dozen of eminent scholars in the social sciences published a book bearing the title *Scientism and Values* (Princeton, N.J., Van Nostrand) in which they applied verbal scalpels to excoriate error and fraud perpetrated by eager beavers in their field of learnings. (Similar chicanery, perhaps not always necessarily intentional, is practiced in other sciences than theirs.)

In all of the very valuable volume there is not one word

* C. S. Lewis, *Studies in Words* (Cambridge, University Press), 1960.

about fluoridation of public water supplies, yet no one seeking the truth about fluoridation can afford to neglect reading it from cover to cover.

And now for a few definitions of *scientism* by devotees of *science:*

HELMUT SCHOECK, Professor of Sociology, Emory University—"The word 'scientism' conventionally describes a type of scholarly trespassing, of pseudo exactitude, of embracing incongruous models of scientific method and conceptualization. Scientism fosters not only the 'fads and foibles' of contemporary sociology, but is also in itself a symptom of an insecure world view, of a negative social philosophy. . . . Moreover, scientistic interpretation of the study of man throws the scholarly grasp of human nature and its volitions open to ideological manipulations when least suspected." *

ROBERT STRAUSZ-HUPÉ, Professor of Political Science and Director of the Foreign Policy Research Institute, University of Pennsylvania—"Marxian socialism *does* profess to be a science. It has found, in the dominant philosophy of the scientific community, monism, a powerful and political ally. Nowadays scientific pretension, rather than the profession of ethical beliefs, screens the power urge. This tendency has led to a progressive devaluation of political ideologies and the rise of the universal ideology of the age, scientism. Scientism has swept all before it, and all the political ideologies of our time purport to be scientific. They are, in fact, scientistic. . . . The blight of scientism has spread in all sectors of modern life. It has made its most consequential and dangerous inroads in the field of politics. In the arsenal of demagoguery, scientism is the most powerful secret ideological weapon." †

GERALD HOLTON, Professor of Physics, Harvard University—"The danger—and this is the point where scientism enters—is that the fascination with the mechanism of this

* *Op. cit.,* Introduction
† *Op. cit.,* page 223.

successful enterprise may change the scientist himself and society around him. For example, the unorthodox, often withdrawn, individual on whom most great scientific advances have depended in the past, does not fit well into the new system. And society will be increasingly faced with the seductive urging of scientism to adopt generally what is regarded—often erroneously—as the pattern of organization of the new science. The crash program . . . the megaton effect are becoming ruling ideas in complex fields such as education, where they may not be applicable." *

CHARLES LUTWIDGE DODGSON, British mathematical scientist who, as Lewis Carrol, 100 years ago prophetically had Alice, his principal fictional character say: "Somehow it seems to fill my head with ideas—only I don't exactly know what they are!" †

• • •

Ten years ago, dating back from this writing, a committee of the United States Congress, perhaps unwittingly, made it easier for ordinary folk to spot the difference between scientists and fakers.

One witness at a public hearing stripped the PHS staffers of their word-trickery, revealed that they lacked understanding of what they were talking about and told them (and the world) what they had failed to do but should have done. He was a scientist. The transcript of his testimony permits no doubt of that.

His name was Robert S. Harris, Ph.D., and he was director of the nutritional biochemistry laboratories in the department of food technology of the Massachusetts Institute of Technology.

Almost the first thing that Dr. Harris told the committee

* From Dr. Holton's paper "Modern Science and the Intellectual Tradition," *Science* CXXXI (April 22, 1960, 1911).

† Quoted, from *Through the Looking Glass*, by Pitirim A. Sorokin, Professor of Sociology, Harvard University, in his *Fads and Foibles in Modern Sociology* (Chicago, Regnery), 1956.

was that, in his opinion, it was "clearly evident" that fluoride is effective in *reducing* (he did not say preventing) the incidence of dental caries in child populations, adding: "At the present time I am in favor of the topical * application of fluoride."

Nearly the last thing that he told them was that he felt endorsement of fluoridation of public water supplies by the Public Health Service, American Medical Association, American Dental Association and similar groups (these included the National Research Council of the National Academy of Sciences) was premature. In reply to the question eliciting that opinion, he testified:

> DR. HARRIS. I feel that way; yes. Maybe this comparison is a valid one—I look on fluorine as being like aspirin. If a person has a headache, an aspirin tablet frequently is effective in curing that headache. That does not prove that the headache was caused by aspirin deficiency. The doctor would rather not have the public taking aspirin tablets for their headaches; he would rather find the cause of the headaches and then cure the disorder from that cause.

The House of Representatives of the 82nd Congress (Second Session) had appointed a special (ad hoc) committee "to investigate the use of chemicals in foods and cosmetics." It was known as the Delaney Committee. Its chairman was Representative James J. Delaney, of New York. The other members were Representatives Thomas G. Abernethy (Miss.), E. H. Hedrick (W. Va.), Paul C. Jones (Mo.), A. L. Miller (Neb.), Gordon L. McDonough (Calif.) and Walt Horan (Wash.).

At this point it might be of service to remind the reader that Representative Miller, a physician, had been state public health officer of Nebraska before his first election to Congress in 1942. He "fell for" fluoridation. As a freshman member of the House of Representatives and in accordance with

* Directly to the teeth by a dentist, none of the chemical being swallowed.

tradition in that body, he was assigned to the least desirable Committee on District of Columbia.

In 1951 Representative Miller introduced a bill to fluoridate the public water supply of the national capital. Caught in a legislative jam, it failed of passage but for fiscal 1952 the D. C. budget contained two words authorizing the municipal water department to include "and fluoridation" among the items for which it could spend tax money. Any one member of the House could have compelled deletion of the two words by raising the point of order that they constituted a legislative rider in an appropriation bill in violation of official rules of procedure. No Congressman did so and that is how the District of Columbia got fluorides in its drinking water.

Subsequently, Representative Miller became skeptical and as a member of the Delaney Committee he rode herd on the fluoridators. At one session of the hearings he pointed out that the U. S. Department of Agriculture frowned on letting brood sows have any fluorides whatever and expressed the opinion that "American pregnant mothers" should have at least as much protection as brood sows.

While the committee was preparing its report to the House, Representative Miller, on March 24, 1952, made a speech on the floor in which, among other things, he said: "I was mislead by the Public Health Service."

The committee filed its report July 10, 1952.

Vincent A. Kleinfeld was chief counsel of the committee. He spun intricate webs of cross-examination in which several pro-fluoridation witnesses got their mental feet tangled.

The committee held public hearings on thirteen days in the first quarter of 1952. Most of these had to do with the poisoning of women's skin by cosmetics and of solid and liquid foods by sundry chemicals. Fluoridation was investigated because, as Dr. Harris expressed it in his testimony:

> Water is food and any chemical that is added to water should be in the same category as any chemical that is added to foods.

Fluoridation was the final topic upon which hearings were held. They occurred in Washington, D. C., on February 13, 21, 26, 28, and March 4 and 6.

When the committee got around to fluoridation, the first witness was Bruce D. Forsyth, D.D.S., assistant surgeon general and chief dental officer of the U. S. Public Health Service, which then was in the Federal Security Agency but later was transferred to the Department of Health, Education and Welfare (HEW).

Dentist Forsyth presented a written statement which, he said, represented the viewpoint of the PHS. He began by quoting the words of his chief, Surgeon General Leonard A. Scheele, before an appropriations subcommittee of the United States Senate, on April 24, 1951, as follows:

> During the past year our studies progressed to the point where we could announce an unqualified endorsement of the fluoridation of public water supplies as a mass procedure for reducing tooth decay by two thirds.

After a brief account of the PHS measures that he called research, the Forsyth statement said:

> In view of the wealth of evidence obtained from all these fluoridation studies—both in the laboratory and in the field —it can be truly said that never before has a health measure been subjected to such thorough scientific scrutiny before being recommended as a standard procedure.
>
> Before a procedure is recommended for public health application, one of the first questions which must be answered with an unqualified yes is:
>
> Is the measure safe?

The witness' statement was brief and seemed to have been composed primarily as a cautious insistence that fluoridation was not hazardous, supplemented with references to eight organizations that had endorsed it.

Committee Counsel Kleinfeld began his cross-examination by inquiring into the terms of these endorsements. The Amer-

ican Medical Association has insisted that its endorsement was "in principle" and was not unconditional. Mr. Kleinfeld produced a document showing that the AMA "kept a foot on base" by warning against use of fluoride toothpaste, chewing gum, and the like in cities with fluoridated water systems.

He also exhibited a letter in which the American Water Works Association secretary wrote: "It [the association] does not promote fluoridation."

(Peculiar circumstances attending the AWWA "endorsement" are related in Chapter XIII of this book.)

The witness soon became so confused that he hesitated while choosing an answer to a quite simple query, whereupon a voice loudly inquired:

"May I answer that question?"

It was John W. Knutson, D.D.S., also of the PHS dental health division, one of the storm troopers of the fluoridation campaign, barging to the rescue of a less hard-boiled buddy.

Under the deft questioning of Attorney Kleinfeld, the troubleshooters of the Public Health Service were obliged to admit that research had been confined to effects of fluoride on children's teeth *and that no effort had been made to determine perils, if any, of the fluoridation formula for middle- and old-aged persons, for malnourished children, for individuals prone to cancer, or to goiter, or diabetics, for those having diseased kidneys, for folk afflicted by, or subject to, arthritis, for populations whose habitual solid foods contain unusual proportions of fluorides; for example, ocean fish.*

In response to Mr. Kleinfeld's questions they alleged that no difference exists between fluorides occurring naturally in water supplies and those added for artificial fluoridation. Subsequently counsel drew from less biased scholars that the chemical naturally present in water is calcium fluoride, only slightly soluble, whereas that cast into water supplies by the fluoridators is sodium fluoride, which is fully soluble.

Dr. Harris was the third witness; the first to utter criticism of fluoridation. He testified on February 19, 1952, the sec-

ond day of that part of the committee's agenda devoted to fluoridation. He began his testimony thus:

> I have no philosophical interest in this matter. I am interested entirely in the scientific data which indicate that fluoride in water supplies is effective in combating dental caries, and in the scientific data which indicate that fluoride is toxic to human beings.

His next sentence declared war on fakers:

> Even though many of the studies of the effectiveness of fluoride in water supplies appear to have been designed to demonstrate the good effects of fluoride *without evaluating the possible harmful effects* of fluoride, it is, in my opinion, clearly evident that fluoride is effective in *reducing* the incidence of caries *in child populations* [Emphasis added.]

He then settled down to the calm and objective task of functioning as a scientist should. He continued:

> It [fluoride] is more effective when the level in water supplies is above 2 ppm. In most areas, however, the level of dosage has been set at about 0.8 to 1.0 part per million because this level appears low enough to avoid fluorosis [mottling of tooth enamel] and yet high enough to produce measurable protection against tooth decay.
>
> All students of this problem will admit that fluoride is a toxic substance if taken in sufficiently large amount.
>
> Thus, the scientific controversy is not involved in the question as to whether or not fluoride in water supplies will effectively reduce dental caries but, rather, whether or not the toxic effects of fluoride at about 1 ppm in public water supplies are insignificant.
>
> If the good effects of fluoridation greatly outweigh the evil effects, then one may be justified in concluding that fluoridation is a valid public health procedure, especially if biochemical processes are not measurably affected.
>
> If the good effects of fluorides cannot be obtained without exposing the body to its evil effects, then one is justified

in preferring the topical application of fluoride to the teeth rather than the fluoridation of water supplies.

It is clear, then, that fluoridation is a calculated risk. Certainly it is not possible to calculate this risk until all important factors in the equation are known.

Dr. Harris then propounded nineteen carefully prepared questions, saying:

"It seems to me that an earnest student of this problem must have the answers to most of these before he is in a position to decide whether the fluoridation of public water supplies is in the interest of the health of the public."

Nearing the close of his testimony, Dr. Harris said:

> We must admit that 1 ppm of fluoride in water supplies is not a very toxic dosage. There is no evidence that it is.
>
> *But there is plenty of evidence to indicate that fluoride in this amount, or slightly more, interferes with enyme systems and these are involved in the growth of bones, in the functioning of nerve tissue, and so forth, and it is difficult, by population surveys, to get any precise evidence on this question.* [Emphasis added.]

Upon the "pilot" studies and other "research" in the "21 cities" series, touted by the PHS as proving the worth of fluoridation, the witness commented:

> DR. HARRIS. I would say that these studies are very excellently designed to show the beneficial effects of fluoride. *I feel that some observations have been omitted from these studies which might have given more information on the adverse effects of fluoride.* [Emphasis added.]
>
> For instance, in the Newburgh study they did not examine the children at the beginning to determine the incidence of fluorosis in the teeth. It is admitted that this mottling is a cosmetic effect, but still, people with mottled teeth are not as handsome as people without mottled teeth. And certainly mottling of teeth is evidence of a storage of fluoride in a certain organ of the body.

MR. KLEINFELD. Do you know whether the people who are conducting the pilot experiments in these cities are examining, regularly and periodically, people of the older groups of our population?

DR. HARRIS. To my knowledge, the studies are concerned primarily with children.

MR. KLEINFELD. Do you have any opinion as to whether the studies should include the effects, if any, upon other groups of population, like the aged?

DR. HARRIS. If the purpose is to fluoridate the water supply of children, then these studies are all right. If the purpose is to show that the incidence of dental caries of children is reduced by fluoride, again, it is all right.

But the problem is to know about the effect of fluoride on the rest of the population.

Since the intent, apparently, of most people who are interested in fluoridation is to fluoridate *all* the water supply in a community, then these studies should include investigations of *all* age groups in the population, with special emphasis, perhaps, on the aged because they might be more susceptible to fluoride than the younger age groups. [Emphasis added.]

MR. KLEINFELD. Do you think it would be more advisable to have studies made of both children and older people who are suffering from some kidney disorders?

DR. HARRIS. Yes. . . . I think it is important to know whether people with the diseases with which humanity is usually afflicted are more sensitive to fluoride than the people who are healthy.

Until we know about that, I think we are on dangerous ground in fluoridating the water supplies. [Emphasis added.]

One of the nineteen questions propounded by Dr. Harris suggested that advocated compounds for water fluoridation should be fed to experimental animals at twenty-five to fifty times the expected human exposure. Mr. Kleinfeld asked if these were not "very high levels." The witness assented and the attorney asked their value.

Dr. Harris replied:

"If, at these levels, there is no toxicity it shows there is a large factor of safety in these compounds. If, on the other hand, there is toxicity, it gives an indication as to what organs and tissues and biochemical processes are affected by the fluoride. You can then pass on to the human species and look for these evidences in human beings."

"Do you know," asked Mr. Kleinfeld, "whether such experimental work with fluorides at these levels has been carried on with experimental animals?"

Dr. Harris replied:

"I have searched the literature, hoping I could find it and *I have not found such a publication.*" (Emphasis added.)

In the course of his testimony, Dr. Harris explained his earlier reference to his preference for topical application of fluoride to the individual instead of forcing it onto an entire population in its drinking water. He said:

> I have my own teeth treated with fluoride this way. The dentist's technique is to dry the tooth surface, then apply a two percent solution of sodium fluoride; allow it to stand for a few minutes and then rinse it all off. During that period the sodium fluoride has reacted with the surface of the tooth and then all the excess is washed away.
>
> By this procedure, there is no possibility of exposure of the rest of the body to fluoride. The teeth, presumed to be most important for treatment here, receive the treatment, but there is no risk of toxicity.

In its report to the House of Representatives, the Delaney Committee wrote (and this sentence was by unanimous agreement):

"It is safe to say that fluoridation is mass medication without parallel in the history of medicine."

CHAPTER XVIII

Mottled Teeth

As recorded at page 1497 of the printed transcript of testimony in the public hearings before the Delaney Committee while PHS Dentist Forsyth was on the witness stand (February 13, 1952), Chairman Delaney sought information about the mottling of tooth enamel:

> THE CHAIRMAN. Let me interrupt there. Doctor, will you explain to us what you mean by mottled condition of the teeth?
>
> DR. FORSYTH. With higher fluoride concentrations you get a discoloring of the teeth. The higher it is, the more brown stain effect, and finally you get to the point where the enamel is so affected it will be missing in areas. This occurs at 14 or 15 parts of fluorine per million parts of water.
>
> THE CHAIRMAN. What is that doing—eating away the enamel?
>
> DR. FORSYTH. It is a discoloration of the enamel.
>
> THE CHAIRMAN. It is similar to a tobacco stain on your teeth?
>
> DR. FORSYTH. We do not have any photographs with us, I am sorry, to show you what a bad case of mottled enamel looks like. We have some.
>
> REP. ABERNETHY. Does it have depth to it? Or does it simply appear on the surface of the enamel and is removable?
>
> DR. FORSYTH. It is in the surface coating of the teeth.

The crown of the tooth, the part you see, has a thin coating of enamel. That is the hard part of the tooth.

REP. ABERNETHY. Does the mottling go through the enamel?

DR. FORSYTH. Yes, into the enamel.

REP. ABERNETHY. It has depth, something which does not just appear on the surface?

DR. FORSYTH. That is right.

REP. ABERNETHY. And [it] is not something that is removable, let us say, with a high cleansing material of some kind?

DR. FORSYTH. That is correct.

THE CHAIRMAN. Ordinary scaling would not take it off?

DR. FORSYTH. No, sir.

REP. MCDONOUGH. When it is discovered, can you treat the individual to remove it? Can you treat him clinically to remove it?

DR. FORSYTH. I do not feel qualified to answer that.

(There was discussion off the record.)

REP. ABERNETHY. In your judgment it is a permanent discoloration of the teeth?

DR. FORSYTH. That is right.

REP. MCDONOUGH. Except for the discoloration, what other effects does it have on the individual? Is it a cosmetic question, or is it a question of good appearance, primarily?

DR. FORSYTH. *Primarily an esthetic appearance.*

REP. MCDONOUGH. In other words, the mottling does not injure the individual at all?

DR. FORSYTH. No, not the mottling of itself.

REP. MCDONOUGH. And when you find mottling on the teeth, do you find that the individual is affected in any other part of his system as a result of absorbing the fluorine from the water?

DR. FORSYTH. If he had high enough concentrations of fluoride he could get some deposit in the bones. You might even get fragility of bone if it was a very high concentration.

REP. ABERNETHY. *Does mottling actually injure the tooth?* Does it tend to shorten the life of the tooth?

DR. FORSYTH. *Other than from an esthetic appearance; no.* If you get a high enough concentration you could get an interference with laying down of enamel so you wouldn't get enamel on the tooth.

REP. ABERNETHY. *What it amounts to, then, is simply a discoloration of the teeth?*

DR. FORSYTH. *Primarily.* [The emphasis was added throughout the foregoing questions and answers.]

We are not through quoting the record yet, but have only stopped for breath. The teamwork between Dentists Forsyth and Knutson may have already convinced readers that mottled enamel was a ticklish subject with the PHS men. It was going to become more so before the end of the Delaney Committee sessions, and the groundwork was laid there for even more devastating testimony two years later, before the Wolverton Congressional Committee, by Dr. Frederick B. Exner, who the PHS scientists may come to wish they had never encountered—if, indeed, they have not already realized it. We interrupted quotation from the record at the point where Forsyth had said: "Primarily." Dentist Forsyth, who had begun his testimony suavely, had gradually become more like Dentist Knutson in his conduct on the witness stand. But let us return to the stenographic record:

REP. ABERNETHY. I see. We were confused and decided to inquire.

MR. KLEINFELD [the committee's chief counsel]. Doctor, I am a little confused myself, because, besides this esthetic factor that you mentioned, I have read in reports that if there is a mottling of teeth, more than a very minor mottling, it is going to make the problem of filling cavities, if any, which occur in those teeth, very, very difficult. Is that not true?

DR. FORSYTH. Why?

MR. KLEINFELD. I am asking you, is it true? I do not know. I am not qualified.

DR. FORSYTH. I don't know why it would.

MR. KLEINFELD. What is your answer to that?

DR. FORSYTH. I don't know why it would.

MR. KLEINFELD. Do you know of any reports to that effect in the literature?

DR. FORSYTH. I don't recall any. Do you? [Apparently turning to Dr Knutson.]

DR. KNUTSON. Except in very high concentrations is the enamel affected.

MR. KLEINFELD. Suppose you had high concentrations, what would happen to a tooth which became highly mottled, with respect to filling cavities that might occur? Would that be a problem?

DR. KNUTSON. It might be; yes.

REP. MCDONOUGH. Would the tooth become more brittle?

DR. KNUTSON. That is correct; yes. The enamel is more fragile and chips more readily.

There are many more pages in the printed record of similar question-and-answer testimony that occurred on February 13, 1952. Sessions also took place February 25 and 26. On February 28, Dentists Forsyth and Kuntson were recalled for further questions and H. Trendley Dean made his first appearance before the committee.

Mr. Kleinfeld produced a reprint of PHS Report No. 1678, entitled *Mottled Enamel in Texas,* which contained description of a classification of tooth mottlings that had been devised by Dentist Dean. It was illustrated with pictures of mottled teeth.

Perusal of the stenographic record seems to justify suspicion that members of the PHS team sensed, in advance, a hard time.

Mr. Kleinfeld displayed the book and pictures and asked Forsyth "whether that is accurate, as far as you know?" The witness replied:

"I would like to refer this question to Dr. Dean."

"Fine!" said Cross-Examiner Kleinfeld.

However, without waiting on formality, Dean said, with obvious impatience:

"These, of course, are not actual cases, as you know. This was developed."

Chairman Delaney snapped to attention.

"What was that, Doctor?" he demanded.

DR. DEAN. These are not actual cases, Mr. Chairman. These pictures were developed and they are artist conceptions. We tried to get the pictures here and there and get the artist to paint them in colors so we could show people for an exhibit. But as time rolled on and we had ample materials to classify, then we started using pictures of actual cases like in that article there [indicating]. But this is purely a medical artist's concept.

MR. KLEINFELD. At the time that book was published, did you believe those pictures to be accurate?

DR. DEAN. That is a close approximation of the wide range from a part and a half [fluoride] per million [water] up to 14 parts per million.

MR. KLEINFELD. Have you changed your opinion on that since then?

DR. DEAN. Well, I have changed this much; I have gone from these paintings to actual photographs of cases in endemic areas, which you see in that article there. I think the natural picture is much more effective than an artist's concept of it.

MR. KLEINFELD. I am trying to get it straight, Doctor. Is that, or is that not, an accurate representation of the actual situation as far as mottled teeth are concerned? We read your classification, Dr. Dean, you see, and then this publication too, was offered in part, at least, by you, sir, and this publication contains these pictures. What I am trying to find out is whether these pictures are accurate presentations or not.

DR. DEAN. Those pictures were designed to try to depict the various grades of fluorosis when we did not have the experience and the actual pictures as of that time. I did that in the 1934 survey in west Texas.

MR. KLEINFELD. And you believe at this time that they do, or do not represent—

DR. DEAN. I would not use an artist's concept of anything if I could get a true photograph of a pathological condition.

MR. KLEINFELD. Were not true photographs available at the time this publication was issued?

DR. DEAN. Not a complete range. We had not gotten into the intermediate.

MR. KLEINFELD. I thought there were areas where mottling had appeared for 50 or 60 years; for example, Colorado Springs.

• • •

REP. MILLER. Would you, then, say that the artist's conception here is the proper presentation to the public as to what mottling is or is not?

DR. DEAN. I would say it is somewhat of an exaggerated condition in order to depict these different points.

CHAPTER XIX

"What Do They Say?"

ALTHOUGH things remain yet to be told about the Delaney Committee hearings, perhaps it would be interesting to leap two years forward to the 1954 hearings of the Wolverton Committee.* As a witness before that investigating panel, Dr. Frederick B. Exner† applied the finishing touches to the description of the botch that the PHS "scientists" had made of tooth mottling in trying to change it from a *disease* to a *malestheticism.*

Whereas the Delaney hearings developed a convincing case against fluoridation, yet resulted in no action beyond a mildly critical report, the Wolverton Hearings turned out to be more or less a setup to chloroform the Wier bill, designed to end federal promotion of fluoridation.

The core of the first paragraph of Dr. Exner's opening statement was:

"In this matter of fluoridation, we come dangerously close to 'official science!'" (Emphasis supplied)

Then he released a veritable barrage demonstrating that the PHS "scientists" did not even know the difference between parts per million of fluoride dilution and milligrams

* Another committee of the House of Representatives, first referred to in Chapter IV.

† Identified in Chapter III.

of daily fluoride consumption. Said he (referring to the scientifically untrained public):

> We don't ask: Is this thing true? Does it make sense? Does it conform to common knowledge? Instead, we ask:
>
> What does Dean say?
>
> What does Arnold say?
>
> What does McClure say? Or:
>
> What does the ADA, or the AMA, the AWWA, the National Research Council, or the Public Health Service say?
>
> And we fail to notice that, when any of these speaks on the subject, it is merely Dean, Arnold, or McClure in a different hat.
>
> Dean, Arnold and McClure have done much work on fluorides, mottled enamel and tooth decay; but, instead of examining their methods, or looking at their data, we merely ask: What do they say? So—
>
> Let's look at what they say?

F. J. McClure, of the Public Health Service, was asked by the council on foods and nutrition of the American Medical Association to write the section on fluorine for the second edition of its *Handbook of Nutrition* (Lewis, London, 1951). His article was also published in the Journal of the AMA, March 12, 1949 (pp. 711-713). The later actions of the AMA were largely influenced by what it says and even more by what it fails to say.

On page 148 of the *Handbook* and page 714, Journal of AMA, McClure makes this statement:

"Fluorine ingestion from domestic waters, even in the areas of greatest fluorine concentration would rarely exceed 8 to 10 *milligrams daily*."

Disregarding Bauxite, Ark., where Churchill, of Aluminum Research Laboratories, reported 13.7 parts per million of fluoride in water no longer used, we may assume that McClure meant water with 8 to 10 *parts per million*. [Emphasis supplied in both paragraphs.]

McClure, Mitchell and others experimented on conscientious objectors during the war (*Journal of Industrial Hygiene and Toxicology*, June 1945). We find (p. 163) that

when they (the objectors) were kept in a hot, humid room, with only casual activity, and permitted to drink Galesburg (Ill.) water, with 1.9 parts per million of fluoride, they got, on the average, 9.7 and up to 12.2 milligrams of fluoride per day.

On the basis of 10 ppm, this corresponds to 51 milligrams per day, a far cry from the 10 milligrams [cited by him] in the *Handbook*.

Limitations of space render it impracticable to quote Dr. Exner's testimony in full as he continued to demonstrate that McClure seemed not to understand how to state measurements in connection with his "scientific" investigations, or even what a twelve-year-old child should weigh, but temptation is irresistible for at least *some* further quotation. Said Dr. Exner:

Let's look again.

In 1944, at Cleveland, O., McClure told the American Association for the Advancement of Science that—"children up to age 12 years exposed to drinking water containing one part per million fluorine will ingest via food and drinking water about 0.8 to 1.1 milligrams fluorine daily, equal to about 0.05 milligram fluorine per kilogram body-weight."

If true, and even assuming that they all get 0.3 [of a] milligram, or, less, in their food, then every child up to 12 years old must drink 1⅔ pints of water per day and weigh 44 pounds.* I don't believe it. Yet statements based on these figures of McClure's are quoted all over the place as "scientifically proved fact."

Let's look again.

In the same *Handbook* (p. 145) McClure says:

"In an attempt to assess the hazard of cumulative fluorosis from fluoride waters, an extensive survey of the fluorine concentration of urine specimens of high school boys and of young (draft) selectees . . . was made by McClure (quoting himself) and Kinser."

* Medical textbooks say that average weight for a twelve-year-old boy is 78 pounds.

The reference is to Public Health Report 59; 1575, 1944. This tells how pooled specimens, from 15 to 20 or less persons each, were analyzed and found, within a wide range, to have about the same concentration of fluoride as the local water. From this he concludes (*Handbook*, p. 146) that—"upward of 90 percent of water-borne fluorine in concentrations of 0.5 to 4.5 parts per million is eliminated in the daily urine of teen-age boys and young men."

The conclusion, of course, is a gross non sequitur and the whole thing a tissue of fallacies. One of the more obvious is that he totally disregards water loss through the skin and from the lungs. You can see the latter on a cold day. [Emphasis added.]

In an article by Machle, Scott and Largent which McClure likes to quote (*Journal of Industrial Hygiene and Toxicology*, 24: 199, September 1942) there is an account of 9 months water-balance study on one individual. It showed that the daily urine output was just half the daily fluid consumption, and about a third of the daily water from all sources. That includes water from foods as well as other sources. Actually, then, if McClure proved anything, he proved that less than half the daily fluorine intake is put out in the urine. Nevertheless, his false conclusion is accepted as "scientific fact" and used as a basis for further conclusions.

Now . . . let's look at what [H. Trendley] Dean and [Francis A.] Arnold say.

Arnold largely confines himself to quoting the works of others. However, in the *Journal of the American Dental Association* (January, 1948, page 30) he quotes an article of which he is co-author. He says:

"In Aurora, Ill. . . . only about 0.4 percent of the anterior teeth showed even so much as the mildest form of fluorosis."

There is some doubt as to what he meant by anterior teeth. If he meant the eight incisors, the 633 children [involved in the experiments] had 5,064 anterior teeth. If he meant the upper central incisors, which are the ones most commonly affected, they had 1,266.

Four-tenths percent of the first figure is 20 teeth. Four-tenths percent of the second figure is five teeth. *The original*

article, however, tells us that 57 incisor teeth were affected. [Emphasis added.]

This may have been an honest error, but it appeared in the most widely read, by far, dental journal. *It has never been corrected* and influenced the thinking of many dentists. Also, it is often quoted. [Emphasis added.]

Now . . . what does Dean say?

At this point, Dr. Exner displayed before the Wolverton Committee the Dean pictures of mottled enamel (according to "medical artists' conceptions") with which Attorney Kleinfeld had confronted Dean before the Delaney Committee in 1952.

Following his comment on that art work, Dr. Exner continued his testimony as follows:

Now . . . what does Dean say?

For example, in *Public Health Reports,* April 11, 1941, page 762, he says:

"It is obvious that whatever effect the waters with relatively high fluoride content (over 2 parts per million) have on dental caries is largely of academic interest; the resultant permanent disfigurement of many of the users (by mottled tooth enamel) far outweighs any advantage that might accrue from the standpoint of partial control of dental caries."

But in Pelton and Wisan's *Dentistry in Public Health,* Philadelphia, 1949, page 145, Dean says:

"The question is frequently raised why certain children have no mottled enamel, while others in the same family, using the same water supply, have it. . . . A number of factors may be kept in mind. Normal biologic variability, natural differences in sensitivity (or resistance), amount of water drunk, amount of milk consumed, dietary and culinary habits, and doubtless other unrecognizable variables influencing fluoride intake."

It is common knowledge that children habitually consume widely different amounts of fluids. . . . It is clear that one [child] may easily get ten times as much fluoride as another, and that any statement that 1 ppm is safe and 2 ppm ex-

cessive; or that one half part is safe and one part excessive, is just plain silly. The two to one differences are insignificant alongside the individual differences. Yet such is the basic postulate on which the case for fluoridation stands or falls.

In *Public Health Reports,* December 6, 1935, Dean said:

"For public health purposes we have arbitrarily defined the minimal threshold of fluoride concentration in a domestic water supply as the highest concentration incapable of producing a definite degree of mottled enamel in as much as ten percent of the group examined."

In a footnote he explains:

"A community is given a 'negative' mottled enamel index when 'less than ten percent of the children show "very mild," or more severe, types of mottled enamel.' "

On the basis of his work, the Public Health Service, in 1942, adopted one part per million (1 ppm) as the maximum permissible amount of fluoride in public water supplies. It was considered that more than that amount caused so much damage that it must be removed, or a different source of water found.

Yet, in 1952, he testified under oath (Delaney Committee Hearings, pp. 1647-1653) that from one part per million of fluoride in the water (a) there would result no "objectionable fluorosis from a public health standpoint or, in other words, that less than 15 percent of children would get 'very mild' or more severe, degrees of mottled enamel; (b) no child would get personally objectionable fluorosis, and that 'anything that attracts attention is objectionable'; (c) that there would be no brown stain, or dull white opacity; (d) that any teeth classified as 'mild' (as distinguished from 'very mild') would invariably be second bicuspids or molars (back teeth which are not seen); and (e) that in teeth showing 'questionable' mottling the changes are 'so very slight you don't even know what it is.' "

These things simply are not true. I have personally seen teeth that developed in Denver, using water with 1 ppm of fluoride, that were stained. The front teeth were mottled with brown and it was obvious at first glance from across the room.

At this point in his testimony, Dr. Exner quoted Dean as having said that his findings were based on "the study of 21 cities." Whenever this was said, as if they were magic words, all doubts about fluoridation were supposed to vanish. Dr. Exner referred to the 21 cities individually, invalidating each, in turn, as a scene of scientific triumph. It was during the "21 cities" period, 1934–1943, that Dean classified (and reclassified) enamel mottlings into proposed degrees of severity.

Dr. Exner continued his testimony:

> To my knowledge, Dean has published five descriptions of mottled enamel classifications (1934-5-8-42-3). . . . Dean [in these for] 1934, 1935 and 1938 are substantially identical with one important difference.
>
> In 1934 Dean said: "No brown stain is present in the 'very mild' classification." By 1935 he had learned better, and said:
>
> "Brown stain is rarely observed in the mottled enamel of this classification and, if present at all, is so faint as to be almost indistinct." This wording is repeated in Dean 1938. In this connection we should note two things:
>
> All these studies were made on children and Dean knew that brown stain, if present, would darken with age and, if absent, might appear later. . . .
>
> Dean also knew that the amount of brown stain, even of badly mottled teeth, varies widely in different communities, and says:
>
> "Many cases of white, opaque mottled enamel, without brown stain, are classified as moderate and listed in that category."

At an early stage of his classifying activities, according to Dr. Exner's testimony, Dean used "questionable" as the label for one group of mottlings, followed by "very mild" and "mild." By the time Witness Exner had finished his story, it would have been a naïve listener, indeed, who would have credited Dean with scientific work in codifying mottled enamel.

CHAPTER XX

Beware of Pyorrhea

NARRATION of the 1952 Delaney Committee hearing was interrupted by insertion (in the last preceding chapter) of the story of Dr. Exner's appearance before the Wolverton Committee in 1954. This was done in the interest of topical continuity, which now suggests a return to the Delaney chronicle because it presents, surprisingly, testimony by an important witness in support of what Dr. Exner said two years before he said it.

The witness was Veikko Oscar Hurme, D.D.S., director of clinical research at the Forsyth Dental Infirmary for Children, of Boston, Massachusetts.

The Forsyth Infirmary is endowed to provide dental service for juveniles. It is chartered for research in the problems of dental disease. It is the oldest institution of its kind in the United States, having been endowed in 1915.

Dr. Hurme presented a written statement and answered the questions of committee members and Chief Counsel Kleinfeld, of the committee's staff. No intelligent reader of the transcript could escape the conclusion that he knew much more about the problems of fluoridation than did its promoters in the Public Health Service and the American Dental Association. It is impossible to include all of it in this chapter but with a minimum of deletions, in his own

words, with nothing added except typographical emphasis, here it is:

> . . . The proposals to raise artificially, to predetermined levels, the fluorine concentrations of all public water supplies which may be judged to be "deficient" in the concentration of this element, stem from a concept according to which there is an inverse relationship between the fluorine content of a tooth and its susceptibility to decay.
>
> Since the fluorine content of a tooth appears to depend primarily upon the quantity of fluorides taken into the body during the period of tooth development, the advocates of universal fluoridation believe that the best practical means for insuring a sufficiently high fluorine content of teeth is by *compelling all children in a community to ingest fluoride-bearing water.*
>
> The fact that such a method necessitates consumption of fluoridated water by all segments of a population is not looked upon by the proponents of mass fluoridation as of sufficient import to interfere with the immediate acceptance of the prophylactic technique they favor.
>
> Fluorine never has been proved to be an indispensable chemical element for the maintenance of healthy body or healthy teeth.
>
> So far as available scientific evidence goes, life can be maintained without the presence of fluorine compounds in the body. . . .
>
> If the body can tolerate minute quantities of certain "trace" elements like radium or fluorine, are we not on unsafe ground when we infer that such unavoidable contaminants are essential for life and health?
>
> There has been more and more tendency to designate fluorine as a dietary essential, although it is clear that this argument cannot be upheld until the physiologic indispensability of fluorine has been definitely established.
>
> It is quite clear, however, that the problem of fluorine intake and elimination must be studied against a background of the general dietary and nutritional status *of the individual.* Presence of other minerals in the diet, such as calcium and magnesium, has an effect on the action of fluorine.

Furthermore, since very little is known about fluorine in various *organic* combinations, in contrast to more extensive information about *inorganic* fluorides, *it appears presumptuous today to claim that inorganic fluorine added to drinking water is the precise equivalent of similar concentrations of naturally occurring fluorine compounds in water and foods.*

The claim made by some water engineers that the water in the distribution system has no "demand" for fluorine—as it has for chlorine—*suggests that fluoridated water is inferior to purer water for the maintenance of life. The minute organisms present in the water do not consume fluorine.*

In the light of present-day information, one may hypothetize that if an organism needs a trace quantity of fluorine, as it needs a trace quantity of cobalt, this trace quantity is generally available all over the earth, without recourse to artificial supplementation. *Some of the highest life expectancies are reported from the regions of the globe with the least fluorine in soil or water.*

Although water is not ordinarily classified as a food, everyone knows that without water nutrition is an impossibility. . . . Therefore, if great pains are taken by the U. S. Food and Drug Administration to insure a high quality of foods, drugs and cosmetics, even greater pains should be taken *to insure the highest quality of public water supplies.*

The uncertainty that exists in the minds of many regarding the advisability of adding fluorine compounds to any public water supplies is due, primarily, to the very incomplete state of our knowledge about the toxic effects of fluorine in its various forms.

There is no disagreement about the fact that fluorine is a protoplasmic and enzymatic poison.

Controversy arises only when those who are in favor of treating everyone in a community with fluorine state that there is no need for concern over the toxicity of minute quantities of this element over a life span of time. . . .

It would seem that all arguments for recommending the impregnating of every person in a community with a daily dose of fluoride are bound to be seriously defective until we possess well-documented scientific evidence on the phe-

nomenon of human variability in regard to fluoride tolerance.

*It is obvious that, for all practical purposes, approval of fluoridation will make fluoridation compulsory for every individual in a community. Every human body is to be treated with the chemical; the unborn, the young, the middle-aged and the old; the sick and the well; those with teeth and those without teeth; those who believe in medication and those who do not. The procedure will be mass medicine of truly heterogeneous population groups without parallel in the annals of medicine.** . . .

Among the causes of variation in fluoride tolerances, variations in health, or physiologic efficiency, would seem to rank quite high. *This theoretical aspect of the problem throws a great deal of responsibility upon such medical organizations as are asked to endorse the concept of mass fluoridation on the basis of existing scientific evidence.*

The very fact that fluorides are claimed by many to be potentially dangerous therapeutic agents should be enough to motivate thorough investigation of the validity of these claims.

Moreover it can be pointed out that there is already considerable more or less fragmentary information in the literature which suggests the need for caution. . . .

The ability of the body to rid itself of various toxic agents is impaired markedly in certain pathologic conditions.

There are almost no data today on the reductions in fluoride tolerance caused by various physical anomalies and degenerative diseases.

The need for detailed studies of the elderly is particularly pressing, since this large segment of our population furnishes the medical profession with most of its problems in the prevention, alleviation, and cure of toxic states associated with physical degeneration. . . .

One can summarize the situation by asserting that medical approval of fluoridation, based on thorough long-term investigations, is still needed.

* In its report to the House of Representatives, the sole quotation by the Delaney Committee from the testimony of any of the witnesses appearing before it was: "It is safe to say that fluoridation is mass medication without parallel in the history of medicine."

It is known that the commonly employed medical diagnostic labels seldom give any definite indication of the etiologic factors responsible for the development of disease in any given instance. With the doubtful exception of some so-called infectious diseases, very few diagnoses are specific in an absolute sense.

The often repeated claim that no harmful results have been noted from the ingestion of water containing only 1 ppm of fluoride loses much of its force if the aforementioned point is kept in mind.

The claim of noninjuriousness rests on a rather bold assumption, according to which signs and symptoms of fluorine poisoning are always sufficiently clear-cut to be easily recognized. This assumption has not been confirmed by positive evidence. Thus it follows that reliance on negative proof of fluorine toxication may be misleading. Positive evidence to corroborate the negative evidence is lacking. . . .

Among the very inadequately studied physical signs of fluorine toxicosis are inflammation and destruction of gingival and peridental tissue [*the gums*]. *Published and unpublished observations by many men suggest rather strongly that periodontoclasia, that is "pyorrhea," may be induced or aggravated, by certain chemicals, including fluorides.* . . .

There are some grounds for the belief that ingestion of fluorides may slightly retard the eruption [*"cutting"*] *of teeth.* If this is a correct observation, it is evidence of a general physical response to fluoride consumption. . . .

Apparently animal experimentation has not placed us in a strong position for recommending immediate adoption of universal fluoridation where the natural fluoride content of water supplies is low.

Most of the animal studies reported in the literature deal with the rat, or some other rodent, *although it is known that the rat is far less sensitive to fluorine than man,* in addition to being dissimilar in many other respects. The rodents, for example, never have two sets of teeth like man. It need hardly be pointed out that if no laboratory animals can be found exceeding man in sensitiveness to fluorine, then the results of even the best organized animal studies will have to be interpreted with considerable caution. . . .

To my knowledge no one has prepared either an index on the basis of special subdivisions of the subject, or attempted a thoroughgoing, well organized review of existing information. For this reason appraisal of the adequacy of published scientific data and of the theorization based upon it has not been at all satisfactory.

The scientific basis for fluoridation will remain weak until all information now available has been subjected to rigorous critical evaluation, after painstaking summarization. . . .

Chemically pure fluorides are drugs that are too poisonous to be dispensed to the general public over a drugstore counter, at least without a prescription. Even dental hygienists have not been permitted to apply fluorides topically, without amendment to the dental laws of the states. . . .

Since the mode of action of fluorides is still obscure, and since dental caries is not a communicable disease, or a disease with a known high mortality rate, there is no need for unrestrained haste in prescribing fluorides internally. . . .

We [the Forsyth Dental Infirmary for Children] do not use them [topical applications of fluorides to children's teeth] as a routine procedure, but two or three years ago we ran a little topical application [directly to the teeth without ingestion] study which led us to the conclusion that the generally given percentage of reduction of about 40 percent* is an exaggeration of the benefits. Our computation gave a reduction figure of about eleven percent and even that, we feel, is not conclusive. We were also left with the impression that the topical application technique requires so much time and care that in the long run we are not much better off than we were with the generally accepted method of cutting into the teeth and filling them. . . .

Despite our very best efforts, and we have people who can read more than one language, we cannot find published evidence that would give us the impression that these organizations have done much original work of their own, if any. . . .

* The PHS "scientists" now claim that fluoridation will prevent 65 percent of tooth decay. Dr. Hurme's reference to 11 percent had to do with topical application—not fluoridation.

I would be very anxious to see enough cooperation and interest by our medical colleagues so that we would have competent—I stress competent—medical studies of this problem so that we would know, for instance, whether children or adults with kidney disease, or diabetes, or fracture of bones, or thyroid disturbances, or tuberculosis, or what have you, eliminate fluorides as efficiently as normal people do.

I can find no record of such studies, but I do find some fragmentary reports which indicate death in case of damage to the kidneys.

I would like to see the development of better statistics in this matter and more adequate observations on which these statistics are based; in particular, better statistics on peridontal conditions which become very important in the aged.

More teeth are lost because of pyorrhea than dental decay. . . .

I would like to add that, prior to going to Illinois [1941-46 he was an assistant professor at the University of Illinois] I had carried on in New Haven, Conn., a little study dealing with what some people would call mottling of teeth, a study which was reported in 1948, or thereabouts, in the *American Journal of Diseases of Children*. The study dealt with the development of teeth in a New England community and the relation of developmental defects of tooth enamel to fluorine toxicosis.

As a result of this study I concluded that nobody, not even Dr. Dean, knew for certain how to define mottled teeth or mottled enamel.

Twelve years later, it is apparent that we know little, if any, more about fluorosis than the Delaney Committee found out in 1952.

CHAPTER XXI

The Cows Couldn't Walk

THE public hearings of the Delaney Committee provided a treat for readers of its published proceedings in the testimony of a witness refreshingly in contrast to that of the spokesmen for the Public Health Service and the American Dental Association.

He was E. B. Hart, Sc.D., professor of biochemistry at the University of Wisconsin. He held a B.S. degree in chemistry from the University of Michigan, his alma mater. After studying in Europe he returned to this country and in 1906 joined the teaching staff of the University of Wisconsin which, in 1949, invested him with an honorary Sc.D. He was the author of 387 published papers in his scientific field and was a member of so many learned societies that he could not remember all of their names.

This is how he started out:

> In 1946 there was definite agitation by certain dentists in Madison (Wis.) to add fluorine to our drinking water. Ours is a low fluoride water. The mayor of Madison appointed a committee and asked it for a recommendation to the city council as to what to do.
>
> This committee consisted of a bacteriologist, a chemical engineer, two biochemists, two nutritionists, two dentists, a pediatrician, a pathologist, two doctors and a layman.

I was a member of that committee.

After much study of existing knowledge, the committee unanimously advised the mayor and the city council not to proceed with fluorination of our water. The committee did not deny that fluorine in proper concentration could be helpful in reducing the incidence of tooth decay.

However, they knew that there were several long-time experiments to be projected where communities of similar size would have available a fluorinated water and a non-fluorinated water. These were to be ten-year experiments with adequate dental and medical control.

Newburgh and Kingston, N. Y., were chosen for experiment. Other experiments were started at Grand Rapids, Mich., and at Brantford, Ont., in Canada.

Since these experiments were to be controlled adequately, the committee believed it prudent to wait until the ten-year data were in before deciding whether or not to fluorinate Madison drinking water.

However, enthusiastic dentists outside our committee prevailed upon the council to authorize fluorination and so, today that is what we have.

Dr. Hart's testimony did not reveal whether or not he was acquainted with Frank Bull, D.D.S., director for dentistry in the state public health department of Wisconsin, whose crude coaching of fluoridation promoters is described in Chapter VII of this book. Dr. Bull's educational activities may have inspired the "enthusiastic dentists" who overrode the wise counsel of the Madison advisory committee.

Dr. Hart referred to "those in charge" of the Newburgh-Kingston project as "insisting that it be continued for the full ten years as planned before final recommendation," and continued:

> It is with this point of view that I am in agreement. If, after ten years of careful control at Kingston and Newburgh the experts agree that fluorine in the amount of 1 ppm has had a definite influence in arresting a considerable percentage

> of caries and that no untoward results are apparent, then and only then should the wide fluorination of low fluorine public drinking water be advocated.

The witness described experimentation he had conducted officially, as a biochemist, with farm animals—feeding them fluorides—and emphasized effects of those chemicals on dairy cattle. He said:

> The bones of the newborn animal are practically free or at least very low in fluorine content. . . . During the life of the animal the fluorine of the food and water is stored in the bones but with partial elimination in the urine. If the fluorine level in the diet and water reaches a point where the capacity of the bones to store fluorine has been met, then there will be an overflow into the soft tissues. *When this occurs the possibility of damage to the kidney, liver and heart becomes real and interference with the function of the normal enzyme systems may result.* [Emphasis supplied.]
>
> All this is why I prefer to wait until the completion of the Kingston-Newburgh experiment before recommending the general fluoridation of water for drinking purposes.

Following the reading of his statement, Dr. Hart was asked by Vincent A. Kleinfeld, counsel for the committee, whether the fact (as related by other witnesses) that persons drank naturally fluoridated water without harm was not sufficient proof of the safety of the PHS standard of one part fluoride to one million parts water. Dr. Hart replied:

> I know that such statements have been made but I wonder whether really there has been any accumulated evidence from expert examination to show that there were no untoward influences over the time. *As a matter of fact, we simply do not know.* [Emphasis supplied.]
>
> As I always emphasize, the toxic limit is a tremendously important matter and when we find communities ingesting a fluorine content such as indicated and nevertheless have gotten along well and apparently have had no recorded pathology, yet we wonder how well controlled was the ex-

amination and whether there is not something after all that did develop that we do not know anything about. . . .

That is a great indoor sport, to take the total analysis of a water and then try to fix in what concentration the fluorine existed. It never has been done and it never can be done. [Emphasis added.]

• • •

MR. KLEINFELD. From our examination of the reports of the Newburgh-Kingston experiments it appears that only children are being medically examined (to detect ill effects of fluoride ingestion). In your opinion, is it, or is it not, important to check other age groups, such as people who are in their fifties, sixties, or seventies?

DR. HART. I think it is quite important to cover the whole field. . . . I would like to know about the adults, too.

MR. KLEINFELD. Would you be interested in knowing more about . . . the aged who may have been suffering from kidney disorders?

DR. HART. Yes; I would like to know about that, too.

MR. KLEINFELD. Then should these pilot cities, in your opinion, be studying those aspects of the problem?

DR. HART. I think they should; yes. For example, if I may go on; when we were working with our animals, we put their tissues through histological and enzymatic studies to determine whether there were influences, particularly on the enzyme systems, of certain levels of fluorine.

We concluded that fluorine is very reactive in certain enzyme systems and that the general reactions which we got with our animals were very much evidenced, not merely in the teeth and bones, but also [in] the soft tissues. From studies with what we call balanced experimentation on intake and output, it was very apparent that with our animals there was storage of fluorine. That is, the amount of fluorine in the bones would rise, in those that were getting fluorides, to 15 or 20 times that which was in the bones of the animals which were not getting fluorides.

So long as there is that storage possibility and the bones can pick it up and keep it from getting to too high a concen-

tration in the soft tissue, then a measure of protection is available. *But if you overreach that point, then disaster follows. It influences the enzyme systems.* [Emphasis added.]

We would like to know the effects, in that regard, fully. We will not know that, however, from the Newburgh-Kingston experiments. They will not be able to give us such data because they cannot sacrifice the individual and so we are not going to have as complete data as you and I might like to have. . . . It has never been established that fluorine is an essential element for the life of a mammal. Perfectly good teeth and bones are made without fluorine in the diet by getting the fluorine just as low as possible in the experimental diets. . . .

MR. KLEINFELD. Do you know whether any experimental studies have been carried on, either in the pilot cities or elsewhere, to determine whether addition of sodium fluoride in drinking water may add to the brittleness of the bones of people who are in the aged portion of our population?

DR. HART. No. . . . I *do* know of such experiments with animals.

We have carried on plenty of experiments where we had excessive amounts of fluoride in their diets, with a result that the bones became of increased size, their breaking strength being actually increased rather than lowered. *But, at the same time, because of fusion at the joints of those bones, the animals would be unable to walk.* [Emphasis added.]

We do know, with our animal work, that calcium fluoride because of lower solubility is less toxic at the same level of fluorine than sodium fluoride. . . .

Now, you know, there is no explanation at the present time as to how fluorine helps the tooth to prevent caries; it is a fact that if you feed high levels of fluorine, going beyond the point of having mottled teeth, that tooth becomes soft, not hard.

Our cattle with excessive amounts of fluorine showed great abrasions of their teeth.

They failed to drink cold water and we wondered why and, *when we opened their mouths and examined them, we*

found that their teeth were greatly abraded, right down to the pulp cavity; that was open and the food was getting into the pulp cavity and there was putrefaction and pain. An excessive amount of fluorine gives soft teeth. . . .

REP. HEDRICK [*a physician*]. *Certainly it would do the same thing in humans, I would think.*

DR. HART. *Could be.*

CHAPTER XXII

Final Boomerang

WE have seen how the fluoridationists depend largely on bluff to support their pretense of science; and how their bluffs, like boomerangs, can come back to smite them, as in the instance of "endorsement" by the American Water Works Association and the American Medical Association (which denied having endorsed fluoridation).

Finally, however, a determined "anti" came along who could not be bluffed. He neatly converted a bluff into a trap.

He was Eugene Allbright, a board member of the Citizens Committee Against Fluoridation for Western Pennsylvania.

In correspondence with the American Cancer Society, he raised questions about fluoridation that the cancer group, confessing lack of qualification to answer, referred to Dr. Linwood G. Grace, of the Pennsylvania State Department of Health, requesting that the latter reply to Mr. Allbright's challenging queries.

Dr. Grace, replying, "ducked" the embarrassing queries and, "leading with his chin," merely used one of fluoridation's pet bromides, as follows:

> The whole question is who [*sic*] do you want to believe; the U. S. Public Health Service, or those who are voicing their private opinion [*sic*]?

In reply to this loaded and ungrammatical question, Mr. Allbright wrote to the politically employed scientist as follows (Mr. Allbright's own emphasis):

> I BELIEVE Dr. J. W. Knutson, chief dental officer, U. S. Public Health Service, and one of the top promoters of fluoridation, who admitted that although it takes 10 to 30 years for cancer to develop, the USPHS *did not* conduct any controlled studies on cancer, with humans or on animals, with artificially fluoridated water. He also admitted that *no* studies had been conducted as to the effects on people in their 50's, 60's and 70's who are forced to drink fluoridated water which he says is "safe."
>
> I BELIEVE Dr. J. R. Doty, representing the American Dental Association, and Dr. J. D. Porterfield, representing the State and Territorial Health Officers Association; who, when asked if their groups made any independent research studies prior to endorsing the fluoridation program, replied: *They did not.*
>
> I BELIEVE Dr. Alton Ochsner, head of the famed Ochsner Clinic in New Orleans and honorary life member of the American Cancer Society, who stated to me in a letter dated Feb. 9, 1961, that he had served on a committee to determine whether or not the water supply in the City of New Orleans should be fluoridated. He spoke with Dr. C. C. Bass, dean emeritus at Tulane University of Medicine and who, for the past FORTY YEARS has been interested in the pathology of teeth and is CONVINCED from his investigations that fluoride causes periodontoclasia [pyorrhea], a disease of the gums which causes the loosening of teeth in older individuals, and that fluoridation should not be used until Dr. Bass is proven wrong. Today New Orleans IS NOT FLUORIDATED.
>
> I BELIEVE Dr. F. E. Ray, research professor and director, Cancer Research Laboratory, University of Florida, who wrote me (Jan. 31, 1961): "Although people say no one will be harmed from fluoridation, there is need for a good deal of investigation of this subject, because we do not have any firsthand information."
>
> I BELIEVE Dr. Ludwic Grosse, chief of cancer research

of the U. S. Veterans Administration, Bronx, N. Y., when he stated in *The New York Times* that: "The plain fact that fluorine is an insidious poison harmful, toxic and cumulative in its effects, even when ingested in minimal amounts, will remain unchanged no matter how many times it will be repeated in print that fluoridation of the water supply is 'safe.' "

I BELIEVE Dr. Charles G. Heyd, M.D., a former president of the American Medical Association, when he stated: "I am appalled at the prospect of using water as a vehicle for drugs. Fluoride is a corrosive poison that will produce serious effects on a long-range basis. Any attempt to use water this way is deplorable."

I BELIEVE Dr. Paul H. Phillips, of the University of Wisconsin, one of the five leading experts on fluorine toxicity in the United States and who had done twenty-nine years of research on this subject, when he stated in Billings, Montana (Aug. 16, 1959): "Fluoridation of water at 1 ppm and its use may be toxic and certainly will be in some individuals. MOTTLED TEETH are the external signs of DENTAL FLUOROSIS. We do not *know* enough about fluoride to recommend its indiscriminate use." In a letter written to me dated Dec. 4, 1959, Dr. Phillips stated: "Fluorine does accumulate and is stored in the bones. It has been stated by those who should be in a position to know that, at these levels of intake, there is no chance of developing harmful effects from fluorine in water supplies. This aspect of the problem HAS NOT been thoroughly studied and probably cannot be answered at the present time."

I BELIEVED Dr. Simon Beisler, chief of urology at Roosevelt Hospital, New York; Dr. Fred S. Dunn, head of the oral surgery department at Lenox Hill Hospital, New York; Dr. John Garlock, consulting surgeon at [Mount] Sinai Hospital, New York; Dr. E. A. Lawrence, director of medicine at Lenox Hill, and Dr. G. F. Oberrender, director of otolaryngology at Lenox Hill, when they stated: "It is now clear that fluoride is a potentially harmful substance when present in the water supply in ANY AMOUNT."

I BELIEVE Dr. J. J. Rae, Ph.D. in biochemistry and organics,

for twenty years professor of chemistry, University of Toronto, Ont., Canada, who urges caution. He says that sodium fluoride, described by Merck Index, is a highly toxic, water-soluble salt that is a deadly poison to enzymes, upon which all life depends.

I BELIEVED Professor Hugo Theorell, enzymologist, Stockholm, Sweden, when he stated to the Swedish Royal Medical Board: "The fluoride ION INHIBITS the action of the many enzyme systems. From water fluoridation at 1 ppm, the short distance to toxic dosage seems to imply a serious hazard. Because of that, fluoridation of tap water should NOT BE ALLOWED."

I BELIEVE the resolution adopted (April 12, 1958) by the Association of American Physicians and Surgeons (comprised of 15,000 members of the American Medical Association) which condemns mass medication (fluoridation) and the use of drugs (fluorides) to treat public water supplies.

I BELIEVE THE CHART released by H. E. Stokinger and R. L. Woodward (U. S. Public Health Service Toxicologists) which states that the safety factor of water containing fluoride at 1.25 parts per million for a healthy adult is ZERO.

I BELIEVE the present director of the National Institute of Dental Research (USPHS) Dr. F. A. Arnold, Jr., when he was forced to admit on cross-examination at Oroville, Calif., in 1955, that he had NO PROOF, that NO ONE would be HARMED by fluoridation.

And finally, above all:

I BELIEVED Dr. H. Trendly Dean, known as the "father" of fluoridation, an ex-director of the National Institute of Dental Research, a "research arm" of the Public Health Service, when he admitted UNDER OATH in court (Chicago, Ill., injunction suit, May, 1960) that his charts and figures, which constitute the "scientific basis" for fluoridation are INVALID according to his own criteria, thus shattering for all time the FOUNDATION of this HOAX that Dr. Grace, Pennsylvania dental director, is promoting.

This, then, is what I BELIEVE about the use of fluorides in the public drinking water supplies. I wonder, if Dr. Grace's

department were not SUBSIDIZED by the top promoters of fluoridation, WHOM WOULD HE BELIEVE?

Although a careful reader scarcely could miss the point, I am constrained to call attention to the gaucherie of the Pennsylvania officials' challenge and the deadly, yet gentlemanly, response of Mr. Allbright.

In the introduction to a recently published book,* Helmut Schoeck, Ph.D., wrote:

> In America there seems to be serious misunderstanding of the original meaning of the Hippocratic oath, the traditional ethics of the medical profession.

The book has nothing to say about fluoridation of drinking water and I have no information as to Dr. Schoek's views on that policy. I suspect that he is not neutral.

But I think it may safely be taken for granted that if Hippocrates lived today instead of 2,000 years ago and, despite a disinterest in politics, he were Surgeon General of the United States or, better yet, were that officer's boss, Secretary of our Department of Health, Education and Welfare, the fluoridation studies would be centered on "bedside care" of the ailing rather than provision of a profitable market for the producers and purveyors of fluorides.

Certainly Public Health Service is marred by incredible delinquencies. If ever we get a Federal Administration with enough brains and courage to rescue that agency from itself and its overlord HEW, an early item should be the terse Executive Order:

Quit Poisoning Our Water!

* *Financing Medical Care* (Caldwell, Idaho, Caxton Printers, 1962), page 4.

(Continued from front flap)

and heated arguments a few basic facts about fluorides and fluoridation have become startlingly clear. These facts, diligently set forth in this concise book, classify it as *must* reading for everyone concerned about his own health and the health of his children in this generation and in generations to come. It is also a book of enormous importance to those who are concerned about freedom of choice in medical matters and those who seek an answer to the question of whether fluoridation is a medical boon or a possible menace to mankind.

The Author

ROBERT M. BUCK has been a newspaperman for over half a century. He started his long career on the Chicago *Tribune*, went from there to the Chicago *Daily News*, then to the Washington *Post* and finally to the Washington *Daily News* where, for 34 years, he covered events in the District of Columbia's municipal government. He has also been an alderman in Chicago, an employee of the federal government, and a magazine editor.

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THE GRIM TRUTH ABOUT FLUORIDATION

". . . Positive proofs of the safety of fluoridation are required. None has been offered.

"The so-called therapeutic concentration of fluoride, arbitrarily established at one part per million in drinking water, is in the toxic range.

"Dental fluorosis (mottling of tooth enamel) is an inevitable result of fluoridation. The evidence reveals that large numbers of the population may be affected, and with varying degrees of damage. . . .

"The conceivable role of fluoride as an insidious factor in chronic disease has been evaded by the proponents. A substantial amount of evidence indicates such a possibility. . . .

"Fluoridation imposes an extraordinary risk on certain individuals who, by reasons of occupation, environmental circumstances, state of health, dietary habits, etc., are already exposed to a relatively high intake of fluoride. . . .

"Fluoride is cumulative at virtually any level of intake; this, coupled with its tendency to interfere with enzyme and vitamin functions, its known etiologic role in certain abnormal bone changes, and its general propensity to act as a systemic poison, requires the most careful consideration in relation to its potentially chronic toxic effects. . . .

"Fluoride is toxic when added to the water and is intended to remain in undiminished potency when it reaches the consumer. . . . The introduction of fluoridation imposes an extraordinary factor of lifelong risk associated with the water supply to which the consumer was not previously subjected. . . ."

—From a Statement issued by the Medical-Dental Ad Hoc Committee on Evaluation of Fluoridation, February 20, 1957