

Part III

weight because of his position of prestige as dean of a dental school.*

The A.D.A. now advises its members to call early research "outdated." Actually the classic descriptions of harm from fluoride by the pioneers, Roholm, the Smiths, DeEds, Vellu and Borei are now of greater value than when they were written. They constitute unbiased research, the results of which have not been influenced by support from vested interests.

The guns set up by the promotional forces to counter-attack have been hitting their marks on the scientific front as they already had on the political level. Even the most discriminating scientists have become prejudiced by such ingeniously conceived and widely disseminated promotional material as W.T.C. Berry's paper on mongolism, the critiques of Taylor's research and the Hornung letter. Concerning myself, the farfetched rumors have been spread from coast to coast and from country to country:

When I was a witness at a court hearing on fluoridation in St. Louis on March 17, 1960, I was obliged to produce my Michigan State Board Registration Certificate. Rumor had it that I was not licensed to practice medicine in Michigan.

A British health official, Dr. C. L. Sharp, Medical Officer of Health for Bedford, and the Royal Society for the Promotion of Health were forced in open court²²¹ to retract a statement about me made at a meeting of the Society June 16, 1960, and previously published and circulated.

*Dr. W. D. Armstrong and associates published experiments in the British Medical Journal, February 20, 1965, p. 486, which indicated that up to 10 ppm fluoride added to the cell culture had no effect on their growth. This, Dr. Armstrong implied, invalidated the Berry-Trillwood experiments.

In the March 20th issue of the same journal on page 793, Dr. Berry pointed out that Dr. Armstrong's cells failed to show significant growth without which *inhibition* of cell growth would be impossible to demonstrate.

A STRUGGLE WITH TITANS

They had claimed that I was opposing fluoridation for financial gain.

A U.S. journal on dietetics which had libelled me was obliged to publish a retraction in its April 1962 issue.

Fortunately, I have remained unperturbed by personal slights of this kind. The conviction that I have already made important contributions to a most confused subject has enabled me to face these onslaughts calmly.

Yet, one cannot help but ask why those promoting fluoridation so eagerly shield the medical profession from valid adverse information. Every new approach in medicine has been subjected to critical examination of its merits and demerits alike. Why do exponents of fluoridation prevent free discussion of this important subject? True scientists invite criticism.

In one of its pamphlets the American Dental Association advises its members: "At no time should the dentist be placed in a position to defend himself."²²² This alone should make people realize that there is much about fluoridation which does not meet the eye.

Addendum: Call and associates published their data in Public Health Reports, Vol. 80, pages 529-538, June 1965, five years after completion of the study. Their grants were not renewed, according to Dr. Call's letter to the author, June 22, 1964. Therefore, the study of ill-effect of airborne fluoride on kidney disease which their research had disclosed was abandoned.

CHAPTER THIRTEEN

UNDER FIRE

By 1957, I had enough data accumulated to be certain that fluoridation was harmful.

Little by little the thought crystallized in my mind that, as a physician, my only chance to combat fluoridation was to procure additional valid scientific data and to present them to the American Medical Association "sine ira et studio"—without anger and partiality. To try to reach the top echelon of the A.D.A. and the P.H.S. was a useless undertaking. Their efforts at downgrading my work had already begun to bear fruit. In Detroit, a whispering campaign had been started among dentists to discredit my scientific competence and my intellectual honesty.

When the A.M.A. endorsed fluoridation in 1951, they did so for only one reason: They felt it would benefit children's teeth. They stand for progress in anything pertaining to medicine. If fluoridation prevented tooth decay and if it was—as they believed—absolutely safe, they were duty-bound to advocate it.

If, on the other hand, they could be convinced that fluoridation is hazardous, this, I was sure, would spell the end of their approval.

Very few of the leaders in the Association were aware that the 1951 endorsement had been accomplished against the backdrop of "No Knowledge" on the medical aspect of fluoridation. It could never have been obtained had there not been a complete lack of data on how fluoride affects humans.

Four of the six Michigan members of the A.M.A.'s House of Delegates had either written or told me that they were opposed to fluoridation. They were obliged to be discreet about this hot political issue. As one of them so aptly expressed it December 11, 1957: To openly oppose fluoridation "is political suicide."

The existing paucity of available information was brought out in a letter which I received from Dr. Charles Farrell of Providence, R. I., a member of the A.M.A. House of Delegates dated Oct. 16, 1954.

Dr. Farrell was chairman of the A.M.A.'s Public Health Committee. In his letter he described in detail how, at the A.M.A. convention in Los Angeles, two state health commissioners, one from Connecticut, the other from Wisconsin, submitted resolutions to the committee. These resolutions "would have made the A.M.A. strongly support, completely endorse and go on record as extolling the virtues and benefits of fluoridation," Dr. Farrell explained.

"I fully recognized," he stated, "that in the House of Delegates there would be no opposition—at least no organized opposition—and no one well-informed or thoroughly enough informed to stand up on the floor and lead the fight against the adoption of fluoridation proposals."

As the lesser of two evils, Dr. Farrell proposed a mildly worded substitute to endorse fluoridation "in principle." "It did not commit the A.M.A. to full endorsement," Dr. Farrell wrote.

Because fluoride research was a virgin field in medicine at that time, the A.M.A.'s Council on Foods and Nutrition could find no physician to present clinical evidence on the subject. Instead, a biochemist, Dr. F. J. McClure of the National Institute of Health and an exponent of fluoridation, appeared to advise them when they were studying fluoridation.

As early as 1933, Dr. McClure had carried out studies at the National Institute of Dental Research which showed

that fluoride interferes with the action of certain body enzymes.²²² Late in 1946, he wrote that "anti-enzymatic effects of trace quantities of fluoride cannot be disregarded."²²³ Yet in 1951, Dr. McClure assured the A.M.A. Councils on Pharmacy and Chemistry and on Foods and Nutrition that fluoridation was safe.

The Councils in their report stated that they were "unaware of any evidence" that fluoridation was hazardous. Yet they warned that "use of products which are naturally high in fluoride content, such as bone meal tablets, or of lozenges, dentifrices, or chewing gum to which fluoride has been added, should be avoided where the drinking water has been fluoridated."²²⁴

Once fluoridation was endorsed "in principle," staff officials, particularly Dr. George F. Lull, the A.M.A.'s executive secretary, and Dr. W. W. Bauer, editor of *Today's Health*, felt obligated to actively support the project.

My correspondence with these two A.M.A. officials showed me that they were uninformed on the subject. They habitually referred medical inquiries about fluoridation to the American Dental Association for an answer as indicated by A.M.A. president Dr. Elmer Hess' letter quoted on page 35.

Another president, Dr. Walter B. Martin, had taken a strong stand, evidently on the basis of incomplete evidence.

When I asked for an opportunity to present my data on poisoning to the general A.M.A. membership, he stated on June 27, 1955:

"I am entirely out of sympathy with the campaign that is being carried on to discredit the use of fluorine in proper concentration in drinking water as a preventive of dental decay."

On April 23, 1954, Dr. Lull had assured me that the American Medical Association, in spite of their endorsement, did not "press any particular action on the part of the state and county medical societies."

The following year, in June, 1955,²⁸ however, he published a scathing editorial in *Today's Health*, which was reprinted and disseminated throughout the world as a part of the A.D.A.'s kit of promotional material. Curiously enough the Lull editorial, which was based upon the information obtained from the A.D.A., was now in turn utilized by the A.D.A. to support their own position.

From Dr. Lull's letter to me, April, 1954, it is apparent that he was not properly informed concerning the available literature. For instance, he stated unequivocally that "no untoward effects are shown in individuals taking as high as 10 parts per million (fluoride) in the water supply" and that 1 part per million will not cause significant mottling. Ample evidence in scientific journals testifies to the contrary.

Dr. W. W. Bauer, the editor of *Today's Health*, supported Dr. Lull's editorial in a 10-page letter August 23, 1955, to a Detroit physician. * The physician had requested documentation for Dr. Lull's assertions. Dr. Bauer failed to provide such data, but quoted instead views and opinions of individual scientists, health officials, editors, most of whom had never carried out research on fluoride. Indeed these scientists had relied on the same source for their information as Dr. Bauer himself, namely the A.D.A. Dr. Bauer dwelled at length on the opinions of the members of the special committee of the National Research Council who were asked to study the subject.

Two of the six members of this committee had been actively engaged in promoting fluoridation, namely Drs. H. T. Dean and F. F. Heyroth. At least two of them, Dr. B. G. Bibby and Dr. Heyroth, had received research grants from industry with a stake in fluoridation promotion.

Curiously enough, at that time, the stationery of *Today's Health* carried at its left-hand border a statement designed as a motto for the U.S. physician:

* Bauer, W. W., M.D., to Lampman, H.H., M.D., Detroit.

"No two living things are alike—physicians do not treat symptoms or disease—they treat patients... There is no standard dosage for drugs applicable to all patients under all circumstances."

A.M.A. officials must have realized that fluoridation seriously infringed upon the most basic principle in therapeutics, namely that "no standard dosage" is applicable "to all patients under all circumstances". Fluoride was to be administered to persons beyond age eight who admittedly have less benefit from it, some of whom might be harmed. Administering fluoride through the water supply was even worse than furnishing a "standard dosage." One part in one million parts of water represents a concentration of fluoride. The actual amount of fluoride consumed from drinking fluoridated water was bound to be much less exact than a standard dosage, depending, as it does, on the amount of water consumed. Individual tolerance or susceptibility to fluoride poisoning was disregarded.

Within a year or two, subsequent to the initiation of our correspondence, the statement vanished from the stationery of *Today's Health*. With its disappearance the principle which this motto expressed seemed to have vanished from the realm of U. S. medicine as well.

I had made repeated requests to program committees of A.M.A., state and local medical societies for an opportunity to present some of my data on fluoride poisoning before their general membership. Many times in the past I had addressed meetings on the subject of allergy on local, state and national levels.

Now, all answers to my requests were uniform. The society had already taken a stand. The subject of fluoridation was "too controversial." On one occasion my application to present a paper at the A.M.A. was mislaid and did not come to light until after the yearly meeting.

I now reluctantly decided to follow Dr. Lull's advice

and approach the matter on the political level. I asked some of the A.M.A. delegates to request examination of my data.

In mid-July of 1957, I received a phone call from American Medical Association headquarters. A hearing of their Councils on Pharmacy and Chemistry and, on Foods and Nutrition was scheduled for August 7th. The scientists on these Councils, I was told would like to hear my evidence on harm from fluoridated water.

It was in the midst of the hay fever season when I am always unusually busy in my clinic. In the evenings, I was exhausted and had to retire early. I had only a few weeks to prepare for presentation of the research data which I had acquired in recent months and which had not yet been processed. Nevertheless, I was delighted with this opportunity to have my data critically examined.

My enthusiasm, however, soon received a jolt. Upon entering into correspondence with Dr. R. T. Stormont, the Council's secretary, I learned about the proposed setup of the hearing. I asked myself why I had not been permitted to present my data to the A.M.A. membership at one of their sectional meetings as is customary with original research of this kind. This would have given me a chance to profit by a free discussion among physicians who, like myself, were in daily contact with patients. Most Council members were solely engaged in experimental work, not in clinical medicine.

I inquired whether or not the proponent evidence was to be likewise critically examined. No clear-cut answer was forthcoming. I was merely told that there were to be two opponent speakers, Dr. Frederick B. Exner of Seattle and myself, and two proponent speakers, Dr. H. Trendley Dean, the "father of fluoridation," and Dr. W. D. Armstrong, the biochemist of the University of Minnesota in Minneapolis.

The correspondence led me to believe that there was another purpose for this meeting than an objective examination of my data.

The previous year I had submitted some of my material to a Special Committee on Fluoridation of the Wayne County Medical Society. This hearing, I later found out, had been initiated at the behest of the Detroit District Dental Society, a branch of the A.D.A. It had been designed to emasculate my evidence; as one dentist (Dr. F. S.) expressed it, "to put Dr. Waldbott on the carpet."

Fortunately, the majority of the Wayne County Committee members had been open-minded. The investigation had turned out to be objective. According to the *Detroit Medical News* July 16, 1956, the Committee had recommended that the Society's governing board adopt a neutral stand. However, subsequently the Society was persuaded by local dentists to abide by their former position as indicated by *The Detroit Medical News* Sept. 17, 1956. The Society continued its 1951 endorsement.

I began to wonder whether this A.M.A. investigation was likewise sponsored by the A.D.A. for the same purpose, namely to neutralize my evidence and that of Dr. Exner. I was told in confidence by a high official of the Michigan State Medical Society that he had already received word that the endorsement would be confirmed regardless of the outcome of the Hearing.

I had sent some of my reprints to the members of the two A.M.A. Councils with a request for critiques; I particularly wanted their evaluation of the detailed case reports prior to my appearance. This would have been most constructive since it would have assisted me in elucidating my cases at the Hearing. Any points not clearly established in my published articles could have been clarified.

The chairman of the Hearing, Dr. Torvald Sollmann, the well known pharmacologist at Cleveland's Western Reserve University, had replied to my request for a critique

of my case reports February 18, 1956, as follows:*

"I must concentrate on revision of my manual (his textbook) and on other commitments which I have already made, so that I could not now go thoroughly into the subject. Better none than half-cooked!"

He was in the process of revising his widely read textbook on pharmacology, a chapter of which was devoted to fluoride. Had he taken the time to review my data at this time, he would undoubtedly have treated this subject differently in his book.

When it appeared that the Hearing would be an investigation of both sides, I requested that additional opponent scientists be invited to present data unfavorable to fluoridation. I particularly had in mind George Calingaert, Ph.D., professor of physical chemistry at Hobart College, one of the nation's prominent chemists, and Mr. K. K. Paulev, an outstanding statistician who had carried out a painstaking analysis of the official statistics from the Newburgh, N. Y., and Grand Rapids, Mich., fluoridation experiments. I knew that I was not as well qualified as a statistician to present this important phase to the Councils. My request was denied.

Another matter was troubling me: Who were the members of the two committees who were to evaluate my research? I was sufficiently conversant with the literature on fluoride to realize that only two of the members, a biochemist, Dr. C. A. Elvehjem, and a pharmacologist, Dr. M. H. Scavors, had carried out research on fluoride. Neither had had the clinical experience needed to properly assess a purely clinical presentation. All other members had to rely on the literature available to them. Had they had access, I wondered, to some of the reports of harm from fluoride in water naturally? These reports were difficult to procure. Some were written in foreign languages.

* Sollmann, Torvald, Chm. Council on Pharmacy and Chemistry, A.M.A. to G.I.W. 2/18/56.

Some of the Council members were leading scientists in their own fields. They included one of the best known dermatologists whose strong letter promoting fluoridation had previously appeared in a Grosse Pointe, Mich., newspaper. Several other members were officers in the P.H.S., the agency promoting fluoridation.

Even those not connected with the P.H.S. or with a fluoride promoting industry had to be more or less cautious about their position since all scientists connected with universities are dependent upon the P.H.S. for their salaries and research grants.

My attorney, with whom I reviewed my correspondence with the A.M.A., was convinced that this would not be a bona fide unbiased hearing. He assured me that its purpose was to discredit Dr. Exner and me. He advised me not to go to Chicago.

I considered several alternatives: Should I ask the American Medical Association to establish a really neutral committee? Should I register, in advance, my doubts as to the objectivity of this hearing? Could I now refrain from attending after I had already signified that I would come? Whichever way I decided I knew I would be in trouble.

On August 7, 1957, at 9:00, I appeared at A.M.A. headquarters in Chicago with mixed feelings. The meeting lasted practically the whole day.

I was impressed at first by the cordiality of the members and the Chairman's effort to conduct the meeting impartially.

During lunch I sat next to Dr. Lull. I was in pain due to an injury to my sacroiliac joint. Ironically, Dr. Lull recommended a drug to me which had given him considerable relief from the same ailment. As it happened, a year or so later, the drug had to be withdrawn from the market because of serious side effects which were not known at the time. Neither he nor any one of the learned members of the Council on Drugs were aware at the time that the drug was

dangerous. They had approved it for general use. Can one blame them for not recognizing side effects caused by fluoride in water, which is consumed day in and day out without interruption?

At the outset, Dr. Exner and I enjoyed the freedom of the floor with relatively little interruption. Since Mr. K. K. Palnev, who had made a fastidious study of the dental statistics was not present, I pointed out that there was serious disagreement among competent statisticians concerning the interpretation of the Newburgh and Grand Rapids statistics. I was unable to present this data as clearly as Mr. Palnev, for whom I spoke, could have done it. I did not review data on poisoning from fluoridated water because my published articles had already been made available to members.

Instead, I concentrated on more recent research which I was carrying out on the effect of fluoride on the calcium and phosphorus metabolism.

I later realized that it was unwise to discuss research which had not as yet been carefully processed. Indeed, subsequent analysis disclosed that these and other data which I had accumulated could not be used for the purpose intended, namely to pinpoint illness due to fluoride.

I showed Kodachromes of mottled teeth of patients who had always resided in Detroit. This mottling occurred in spite of the fact that Detroit water is practically free of fluoride (0.1 part per million). I now know that not only dental fluorosis but also systemic chronic fluoride poisoning can occur from sources other than water in areas where water contains little or no fluoride. Dr. Dean, "the father of fluoridation," who was sitting at my left, and who was to testify later, confirmed that my Kodachromes portrayed true mottling due to fluoride. He indicated that fluoride present in such drugs as calcium preparations which the patient may have taken early in life or in baby food, formerly made with bone meal, could be responsible. If such

motting occurs at 0.1 ppm, I pointed out, how can anyone maintain that 1.0 ppm causes no motting?

Dr. Frederick Exner, a Seattle radiologist, who had been studying fluoride's effect for years, gave a scholarly discussion in which he analyzed some of the P.H.S. studies and pinpointed their fallacies.

One of the two proponent scientists, Dr. Armstrong, candidly admitted that he did not anticipate speaking at this meeting. Thus he inadvertently disclosed that the purpose of the hearing was not to examine both sides. He gave an impromptu description of his new analytical method which he had developed to determine fluoride levels in blood. Whereas this was a valuable contribution to biochemistry it had no bearing on clinical medicine.

Dr. H. T. Dean, who had retired from the P.H.S. and held a position with the A.D.A., outlined his experiences in U. S. cities with motting which he was one of the first to describe.

I questioned Dr. Dean's conclusions that fluoride in water naturally was solely responsible for decay prevention. He had failed to demonstrate to what extent such important tooth builders as calcium, phosphorus and magnesium, which almost invariably accompany fluoride in natural fluoride areas, had affected his statistics. He answered briefly: "The figures are available. Anyone who wants to do so can plot them. He gave no reason why he himself had not done so."

Before long I could detect a hostile atmosphere. There were constant interruptions by three scientists. One of them, before the meeting, had been pointing out to his colleagues a minor inadequacy in one of my publications. I overheard him repeatedly remark that this proved my data "unscientific."

The three dominated the questioning. At one time one of them, Dr. Perrin Long, became so emotional in his interrogation that I had to protest to the chairman.

One implied by his questions that I had omitted certain tests which had, in fact, been carried out as a routine matter but had not been mentioned in my published case reports because they seemed to be irrelevant. In this way, he suggested to the other members that my work was not thorough.

Much was made of the fact that Dr. Exner and I believed that the pivotal Linsman and McMurray case⁴⁴ had died of poisoning from fluoride in water naturally. The diagnosis on record No. 86050 of the Wm. Beaumont General Hospital, El Paso, Texas, was "Chronic Fluoride Poisoning." The authors entitled their report *Fluoride Osteosclerosis (bone hardening) from Drinking Water*. It did not appear likely to me that a minor injury to one of the patient's kidneys sustained many years earlier could have caused the destruction of both kidneys.

This honest difference of opinion on a point on which no one has the final answer was utilized by one of the three scientists to imply that Dr. Exner and I were "misrepresenting" the case.

Another curious attempt was made to downgrade my research.

In my studies I had distinguished between allergy and intolerance to fluoride. No one with experience in allergic diseases would question that these are two distinct phenomena. A person intolerant to whisky can become intoxicated by a small amount. Others can drink many times that amount without becoming intoxicated or temporarily poisoned. On the other hand, a person who is allergic to whisky will start sneezing, coughing, wheezing or break out in hives even after the first swallow. This is not intoxication. It is allergy.

Clinicians dealing with allergic patients are thoroughly familiar with this phenomenon of lowered tolerance to drugs in distinction to drug allergy. When a few years later the editor of the *Journal of Allergy* reviewed one of my ar-

ficles in which I emphasized this distinction he advised me to omit this passage. Every physician treating allergic patients, he explained, is conversant with this phenomenon.

One of the three scientists asked a fellow Council member, a pharmacologist, whether or not a distinction between allergy and intolerance to fluoride was justified. As though he had been anticipating this question, he promptly termed my explanation a "matter of semantics." This gave the other Council members, none of whom had specialized in allergy, the impression that I was trying to mislead the Council members.

The foregoing are but a few highlights of this meeting. My main evidence, namely my cases of poisoning on which I had expected to arouse a lively discussion, was hardly considered.

Significantly, in the Report of the Councils²²² to the House of Delegates, page 14, only one sentence dealt with my testimony: "Dr. Waldbott's reports (of chronic fluoride poisoning) fail to demonstrate enough consistency to justify impartial acceptance as showing a symptom complex due to fluoridated water." Since inconsistency is the most characteristic feature of chronic fluoride poisoning, this comment actually tends to confirm my observations. Subsequently I reproduced the disease at will by administering minute doses of fluoride on a double blind basis. Thus the Council's only objection has been eliminated.

The Report was submitted to the House of Delegates. At the meeting of their Reference Committee a formidable array of top health officials appeared personally to testify in favor of fluoridation. I considered it useless to take part in this political battle. A stormy debate took place in the House of Delegates. About one-third of the delegates registered their disapproval by voice vote.* As far as the general public was concerned, the A.M.A. had confirmed

* Alsen, L.A., M.D., California Delegate to A.M.A. to G.L.W. 1/1/58.

its position advocating fluoridation. However, anyone who takes the time to examine the 20-page Report carefully will discover that it contains as much or more evidence indicating fluoridation than in favor of it. Yet, on the basis of a one page news release of the A.M.A.'s action, an increasingly vigorous promotional campaign was now being initiated.

Numerous investigations have since been made, some before city councils, some at state levels.

The pattern is always identical. A so-called "Investigating Committee" is established at the behest of the A.D.A. Its members are uninformed concerning fluoridation and must therefore be guided by one or more staunch exponents. Carefully briefed how to proceed, the proponents put fluoridation across by downgrading opposing views and by constantly quoting endorsements which have been secured on the political level.

Since few research grants are available to scientists from sources other than the P.H.S. and fluoride promoting industry, expert witnesses in opposition to fluoridation are not readily available.

Physicians are reluctant to publicly oppose anything which the officials of their medical society favor. Should they counter a project which has been widely lauded as a great boon for children, their fellow citizens might conclude that they lack public spirit. They don't have the time to carefully scrutinize the involved and confusing scientific literature.

One of the most important hearings in recent years took place in Toronto, May, 1960.

An investigation had been authorized by Ontario's Prime Minister Leslie Frost and the Ontario Parliament. Previously, fluoridation of Ontario cities not already fluoridated had been outlawed. Minister of Health, Dr. M. B. Dymond, and Mr. Allan Grossman, Minister without Portfolio, had opposed fluoridation. The special commission

was appointed March 17, 1959, with full investigating power and unlimited funds.

W. G. Brown, M.D., D.P.H., of the Ontario Department of Health, an ardent proponent, was in charge of initial arrangements for this investigation.*

In the spring of 1959, at a meeting of the Health League of Canada, at the Windsor Hotel, Montreal, Dr. Gordon Bates, the League's director and Canada's major fluoridation promoter, boasted that he was instrumental in having the fluoridation question submitted to another study. This was his means to counter Prime Minister Frost's policy which had blocked general fluoridation in the Province.

The three member commission consisted of two lay persons, Mr. Justice Kenneth Gibson Morden, Chairman, and Mrs. Cameron McKenzie and was guided by Dr. G. E. Hall, President of University of Western Ontario. Dr. Hall, the only scientist and a physician, was looked upon by the others as the expert.

A public hearing was announced for Monday, May 2, 1960. Prior to this date, however, the committee had already propagated to the press and throughout Ontario the findings of six leading Toronto scientists, all of whom were known proponents of fluoridation. Some of them were recipients of U.S.P.H.S. research grants. My offer to balance this unfairly weighted procedure by obtaining competent opponent scientists as advisers to the Committee was rejected.

In a letter to Justice Morden dated August 3, 1960, I requested that Dr. Hall disqualify himself as biased: According to *Health*, March, 1956, page 34, he had been serving as Honorary Advisory Director to the Health League, Canada's major fluoridation promoting agency. He was president of a university which had received research grants from the Public Health Service,²²⁸ the major U.S.A. promoter

* Brown, Dr. W. G., Deputy Minister of Health, Ont. Dept. of Health, Toronto, to Dr. G.L.W. 3/18/59.

ing agency; his daughter was employed by Alcan Africa, Ltd., Montreal, a subsidiary of Alcoa, the major industry promoting fluoridation as was publicized in *Alumni Gazette* Nov., 1961, page 3, of his university. Justice Morden ignored my request.

It was obvious that the so-called experts selected by the Committee to act in an advisory capacity had merely read promotional material. They incorporated in their report incorrect data gleaned from proponent literature and thus showed that they had failed to examine original sources.

There were other conditions which prevented this hearing from being objective: As set up originally, the schedule provided no opportunity for presentation of scientific data unfavorable to fluoridation. Proponent evidence was not subjected to thorough critical examination. The Commission's final Report was based principally upon "Classification and Appraisal of Objections to Fluoridation" assembled by Drs. K. R. Elwell and K. A. Easlick, University of Michigan health officials.¹²⁹

Hearings had been open to the public and the press. However, when I presented the most powerful evidence against fluoridation, namely poisoning from drinking fluoridated water, Dr. Hall's Committee decided that it should be heard behind closed doors.

The questions asked of me at this hearing, reminiscent of those asked at A.M.A. headquarters, were designed to embarrass me. I was asked, for instance: "Don't you respect the leaders of scientific organizations?" "Aren't health officials competent and honest?" Whatever my answer to such a question, it was bound to be held against me. To my amazement, Dr. Hall, an M.D., asked: "Isn't water a poison, too, when taken in large amounts?" Dr. Hall's implication that fluoride is no more poisonous than water disregards the fact that the poisonous action of a biological agent is determined by the latitude between its harmless and its toxic dose. For instance, the margin of safety for salt is wide;

for fluoride, it is extremely narrow or, for some people, almost nonexistent.

Other investigations, such as that of the New Zealand Commission and of the World Health Organization, were conducted in a similar fashion. At least five of W.H.O.'s seven-member special Committee were known to be ardent promoters of fluoridation in their respective countries.²²⁷

These are the investigations upon which the case for fluoridation hinges.

Regardless of the incontrovertible facts presented while under fire, I realized that, on this explosive subject, it was almost always futile to try to change the attitude of anyone who had already committed himself in favor of fluoridation.

CHAPTER FOURTEEN

A SLOW CLIMB

Early in my medical career a well known clinician told me: "To be successful, it is not enough to acquire knowledge. You must make others realize that you possess this knowledge."

In medicine there are two means of communication, the medical journal and the medical meeting. By the time I was ready to present some of my research on fluoride to the medical profession, the subject had already become so controversial that medical editors and leaders in medical societies shied away from anyone who even mentioned the word fluoride without plugging for fluoridation.

Nevertheless, as I accumulated new data, interest in my work began to develop. My articles on the subject appeared in several European scientific publications including the important Scandinavian *Acta Medica*.

An item in the weekly *Deutsche Medizinische Wochenschrift*, by Dr. L. H. Tholuck of Frankfurt/M.-Praunheim, proclaimed the absolute safety of fluoridation. When the editor learned of my research, he invited me to submit an article on poisoning from fluoridated water. This article²²⁸ alerted many European physicians to the potential hazard of fluoridation.

A fortunate circumstance resulted in the publication of my first article in the U.S.A. The February, 1961, issue of the *Archives of Environmental Health*, an American Medical Association publication, contained a symposium on fluoridation.

sum by leading fluoridation exponents in this country entitled "The Physiologic and Hygienic Aspects of the Absorption of Inorganic Fluorides."²²⁹ The names of the contributing scientists read like a Who's Who in fluoridation promotion. Dr. Robert Kehoe, Director of the Kettering Laboratory, Cincinnati, presented the opening discussion. There was a glowing account of the success of fluoridation in Grand Rapids. The so-called overwhelming evidence of fluoridation's safety was based principally upon the controversial P.H.S. survey of Bartlett, Texas.

Previous correspondence with the *Journal of the American Medical Association* led me to believe that not even a letter critical of proponent research would be published.

I therefore proceeded cautiously. I asked the *Archives* editor whether or not a letter commenting upon some of the statements made in the Symposium would be acceptable. His response was encouraging. To condense into a letter the vast amount of original data which I had accumulated constituted a formidable problem. After some correspondence, the editor agreed to publish my article, "Physiologic and Hygienic Aspects of the Absorption of Inorganic Fluorides, Comments on the Symposium."²³⁰

In this article I established three basic reasons for the many discrepancies in fluoride research:

(1) The amount of fluoride taken into the system, its storage in vital organs and elimination from the body varies widely from person to person.

(2) The biochemical and statistical data presented in The Symposium were not correlated with clinical findings. Even the most thorough analyses of fluoride in the blood or in body tissues are worthless unless we know how the patient reacted to fluoride.

(3) At the present stage of our knowledge it is impossible to evaluate to what extent fluoride, accumulating in vital organs other than bones and teeth, interferes with the function of these organs. Hence, statistical data presented

at the Symposium do not apply to every person. There are wide differences in an individual's response to fluoride depending upon his state of health.

On the basis of tables and charts, I demonstrated erratic variations in fluoride content of food. Dietary habits, especially excessive consumption of tea and seafood affect the amount of fluoride taken into the system. In air-contaminated areas, vegetables, especially leafy ones, and fruit contain many times more fluoride than average. Some drugs and vitamins contain fluoride. In view of so many sources of fluoride intake, not epidemiological statistics but careful review of histories of individual cases, especially their food and drug habits and the individual drinking patterns, is of paramount importance.

I demonstrated the fallacy of the claim that only 10 per cent of ingested fluoride is stored in the system and pointed to wide fluctuations in urinary fluoride elimination from day to day. Statistics based on one or a few urinary fluoride determinations, therefore, do not reflect how much fluoride a person has taken into and stored in his system.

I discussed the many reports of poisoning from fluoride naturally present in water. I pointed to the wide variety of symptoms in fluoride poisoning which was first demonstrated experimentally in 1940 by two Kettering Laboratory Scientists, Machle and Evans.²³⁰ They attributed the wide spectrum of its manifestations to the peculiarity of the fluoride compound involved, to the dose administered, the method by which fluoride enters the system, the diet and many other variables.

I emphasized that scientists had given little attention in the past to fluoride storage in organs other than bones and teeth. Accumulation of sizeable amounts of fluoride in vital organs (Table 14) in persons with kidney stones was reported from nonfluoridated (0.1 ppm) New York City.²³¹ This is proof that the bulk of fluoride stored in the system is not necessarily derived from water.

Like Dr. Herman, the Utah scientists Call and Greenwood,²⁵ who had confirmed excessive fluoride storage in soft tissue organs, disregarded this most significant observation.

From Drs. Nalbone and Parlato of Palermo,²³¹ I received the X-ray of calcified blood vessels in a forty-nine year old man with advanced skeletal fluorosis (Fig. 27). That fluoride does accumulate in the walls of blood vessels has recently been confirmed by other students of the disease. Why would it not harden blood vessels just as it hardens teeth and bones in which it is stored?

I received many communications from scientists commending me on this research. Only one unfavorable critique has come to my attention. It was published by the key promoter of fluoridation, Dr. Frederick J. Stare, in his Sept., 1961, *Nutrition Reviews*, Vol. 19, page 259. Dr. Stare is one of the most vociferous defenders of the food industry against those who warn about hazards of chemical additives to food. Dr. Stare's *Nutrition Reviews*, the publication of the *Nutrition Foundation, Inc.*, names forty-nine companies as its sponsors. Several of its supporting industries including Procter and Gamble, Reynolds Metals and Swift & Company have a stake in fluoride promotion. Swift sells fluoride to the city of Chicago for water fluoridation.*

Dr. Stare criticized several minor shortcomings in my article. My method of fluoride analysis should have been outlined in detail, a point well taken. I failed to state in my article that Mr. George Kosel of Passaic General Hospital, Passaic, New Jersey, uses the standard method of analysis recommended by the Official Methods of Analysis of the Association of Official Agricultural Chemists, Eighth Edition, 1955, and Standard Methods for the Examination of Water, Sewage and Industrial Wastes, Tenth Edition, 1955, published by the American Public Health Association. By

* Chicago Daily Tribune 11/22/57.

resurrecting the Horning hearsay, Dr. Stare subtly cast aspersions on my scientific competence, in order to discredit my work.

Dental Abstracts of June, 1962, page 362, an A.D.A. publication, quoted the Stare critique. Ingeniously they failed to mention the name of the journal in which my article had appeared. Thus, a dentist, reading the Stare account, would have been obliged to devote much time and energy searching for my original article. Evidently the A.D.A. was aware that a dentist who personally examined this article would have gained considerable knowledge about the weakness of the case for fluoridation.

My article in the *Archives of Environmental Health* represented a critique of data reported by others. It was therefore a negative approach. There was need for a positive presentation of my own findings.

The material which I had presented to the Ontario Fluoridation Investigating Committee contained a wealth of information. To be suitable for the medical profession, however, it had to be put together into a concise article. A monograph of 60 pages with 227 references entitled, *Fluoride in Clinical Medicine* was published in 1962 in *International Archives of Allergy and Applied Immunology*.³⁴ In it I presented documented data on fluoride metabolism, on acute poisoning as well as seven detailed case reports of chronic fluoride poisoning from artificially fluoridated water. Brief mention was made of a woman in the habit of drinking 15 to 20 cups of tea daily for many years. She showed characteristic features of fluorosis, including calcification of ligaments in the spine. Her urinary excretion of fluoride ranged from 1.7 to 6.3 mg (6 determinations).

With this article I was about to break into the United States medical literature for the second time. This time I did not succeed.

The editor of a major American medical journal had dis-

played much interest in the monograph and desired to publish it. As is customary, he sent it to his editorial advisors for an appraisal. They rejected it mainly because I had failed to recommend the "great health measure": fluoridation of public water supplies. Purposely I had confined my presentation strictly to scientific data. I had not mentioned fluoridation because of its political overtones.

The wording of the rejection had a familiar sound. It was nearly identical with the rejection which the editor of another journal had received from his advisors.* P.H.S. officials serve on editorial committees of most U. S. medical journals. Editors not familiar with available literature on fluoride know of no one else to whom to turn for advice. They therefore consult dentists and health officials, whom they assume to be experts on fluoride. They are not aware that the P.H.S., regardless of its high scientific accomplishments in most areas of medicine, is the type of organization in which subordinates must adhere to the policy of top brass, i.e., promote fluoridation.

Other editorial advisors, outside the sphere of P.H.S. influence, who carefully scrutinized my article, considered it an important contribution to the subject.

There was another means of communication, the medical meeting. On my 1959 European trip, I noted that scientists who had worked on fluoride poisoning at the University of Palermo, Italy, were not familiar with the research done at the Eastman Dental Institute at Rome, a short distance away. Scientists in Paris had no knowledge of the work done by either of these institutions. There was no exchange of ideas and no co-ordination in fluoride research among those who had produced evidence unfavorable to

fluoridation. This was in striking contrast to the efficient organization of those propagating research favorable to the subject.

I proposed to Dean René Fabre of the Faculté de Pharmacie at the University of Paris, France, that he and some of the Italian scientists arrange a conference on fluoride research.

Dr. Fabre was responsible for banning fluoridation in France. A personal experience convinced him early in life that fluoride can cause serious trouble: as a young man he had developed arthritis. He reasoned that small doses of sodium fluoride should ameliorate the osteoporosis (bone softening) often associated with arthritis. Upon taking a few doses of sodium fluoride (up to 100 mgm) he learned otherwise. They produced neuromuscular pains and severe stomach and bowel upsets of the kind which I had observed in my patients. Moreover, the fluoride had aggravated the arthritis. The cure turned out to be worse than the disease.

Another outstanding scientist, Prof. Andrea Benagiano, the head of the University of Rome's Eastman Dental School, displayed interest in the conference. He had always been aware of the dangers of fluoride. Fluoride ejected from volcanoes in the region north of Rome contaminates water supplies. The concentration ranges between 2 and 6 parts per million. He, and several of his collaborators, especially Prof. Sergio Fiorentini, had made studies of fluoride's ill effect to the human system,²⁸² particularly to the gums. Like other research unfavorable to fluoridation, the findings of these noted scientists is rarely mentioned in the U.S.A.

Another scientist interested in the proposed meeting was Prof. G. Bredemann of Hamburg (Fig. 28). He had just completed his classic book with 1200 references.⁷⁸ I was fortunate to confer with this great scientist at his home in 1959 shortly before he suffered a fatal stroke. He was

*The same journal recently rejected a scholarly review on fluoridation by D. H. Fogel, M.D., of Stamford, Conn., using approximately the same wording:
"To publish this paper would add further fuel to the fire of heat and emotion..."



**PROFESSOR GUSTAV
BREDEMAN**

1879 — 1960

Former head of the State Institute for
Applied Botany, Hamburg, Germany.

Fig. 28

nearly blind at that time. The strain of his extensive and constant studies might well have hastened his death.

His collaborator, Dr. K. Garber, was eager to assist in my project. Two professors of Hanover's Veterinary Institute where some of the early observations on fluorosis in cattle had been made, Drs. E. Hupka and G. Rosenberger, likewise showed a keen interest in the conference.

Rome was chosen for the meeting. The date was to be March 19 to 22, 1961. On May 2, 1960, Prof. Andrea Benagiano informed me that the Italian government had decided to underwrite its expense. I was charged with preparing the program.

Meantime, an uninvited scientist, a top official of the Canadian Government displayed much interest. He was anxious to serve on a committee and to assist in making arrangements. I welcomed his participation, but was some-

what at a loss to explain how he found out about the proposed conference. I had only one clue. His correspondence with me began shortly after I had referred to the proposed Rome conference before the Ontario Fluoridation Investigation Committee in Toronto, in June, 1960.

Three weeks before the conference was to take place, I received a cable from Rome in which I was told that financial support had been withdrawn. The conference had to be cancelled.

Correspondence with the Italian scientists indicated that they, themselves, were much dismayed by this sudden turn of events. They were anxious to have me proceed with plans to hold the meeting elsewhere.

The Eastman Dental Institute in Rome was founded by George Eastman of Rochester, New York. Italian scientists were recipients of \$73,845 in research grants from the U.S. Public Health Services in 1960; \$495,564 in 1961; \$500,335 in 1962. Whether Rochester, Washington, D. C., or Ottawa was instrumental in achieving the about-face of the Italian Ministry of Health, I shall never learn.

In retrospect, I cannot help but recall a letter written by the Chairman of the Fluoridation Committee of a dental society in a Pennsylvania town, dated October 6, 1961, to Mrs. W. S., Ketchikan, Alaska. It stated:

"We now have spies in most of the established national organizations opposed to fluoridation and can anticipate the moves they are making, and we can really hit hard now. Of course, this is not for publication."

In Paris, Prof. R. Truhaut, Dean Fabre's successor, was interested in holding the conference in Paris. I hesitated to go along with his plan, since he intended to have the World Health Organization sponsor it. W.H.O. had announced its position in favor of fluoridation and was responsible for its promotion in several countries under the leadership of U.S.P.H.S. officials.

While my correspondence with Prof. Truhaut was in

progress, an allergist from Holland visited me in Detroit. He is widely known in European medical circles and well acquainted with high Dutch officials. I told him about my woes. He generously volunteered to host the meeting in Holland.

The program had been set up. The scientists who had planned to convene in Rome had been invited. My friend was to make local arrangements.

However, a new hitch developed. During my correspondence with him I learned that he had invited some of the Dutch public health officials to collaborate in running the meeting. At the time, Dutch health authorities were about to introduce fluoridation in the key cities of Rotterdam and Amsterdam.

My aim was to confine the meeting to scientists who had carried out original research on fluoride. The most competent ones were to preside at the scientific sessions. My friend, on the other hand, wanted to honor his Dutch friends, our hosts, by appointing them chairmen. This is a customary procedure and ordinarily would have been a reasonable request. I knew that a single promoting scientist, by chairing a session of the meeting, could permit the discussion to diverge from the scientific to the political level. This I was determined to avoid by all means at my disposal.

The final blow came when my friend suggested, undoubtedly at the request of his Dutch advisors, that one evening of the meeting be set aside for a visit to Tiel, the Dutch town fluoridated on an experimental basis, the Grand Rapids of Holland.

When proponents wish to convince scientists and lay persons of the efficacy of fluoridation, or when an industrial concern wants to prove that poisonous air contaminants emanating from their factory smokestacks are harmless to vegetation, livestock and humans, they invite their prospects to the fluoridated town or to the respective factory to witness at first-hand the so-called scientific evidence in

support of their stand. Free transportation and hospitality are provided by the corporation.

In the early 1950's such an excursion to an air-contaminating factory in Scotland took place. A scientist in Swiss government employ told me that he was offered free transportation from Switzerland to Scotland. His superiors, no doubt aware of the purpose of the visit, refused to give him a leave of absence.

In the U.S.A., scientists opposed to or lukewarm on fluoridation have been invited to Newburgh where they were shown a selected group of children,* i.e., only those likely to impress them favorably. Similarly, a Detroit city councilman** given the official tour of Grand Rapids returned with glowing reports of fluoridation's great accomplishments.

My Dutch allergist friend had already mailed the printed invitations to participating scientists and had made arrangements to house them in a delightful Dutch hotel when—because of the ominous changes in the set-up—I was obliged to cancel the conference.

I was faced with a difficult decision. By revoking arrangements for the conference a second time I could have become the laughing stock of all those who had thus far co-operated with me. Fortunately this did not happen. My abrupt turnabout, however, marred a long friendship with my Dutch friend and his charming family, a friendship which I had highly valued. He had every reason to take offense at what seemed to be my lack of courtesy. Neither he nor anyone else could be expected to understand the true motives for my decision without having personally experienced some of the many adversities to which I had been subjected over the years. He may never know how much

* Smith, H.V., U. of Arizona, to Munch, R.J., Greenwich, Conn. 9/17/54.

** Lincoln, J.H., Detroit Councilman. "Fluoridation of Water," Dec., 1956.

I had really appreciated his efforts in my behalf.

I immediately contacted other scientists in Germany and Switzerland to make a third try for a satisfactory meeting place. Only two weeks remained for me to set up the new plan. One of the three scientists Prof. T. Gordonoff, Chairman of the Department of Pharmacology, University of Bern, made arrangements at the Gurten-Kulm Hotel, located on a mountain overlooking this beautiful university town, the capital of Switzerland.

With fear and trepidation he and I held a preliminary meeting in a Basel hotel. The previous program which had been so carefully planned for Rome and Holland had to be scrapped. Now, two days before the meeting, we didn't know who would attend. I was prepared to spend three days at the hotel as the sole participant of the conference. I planned to utilize the time mountain climbing.

On Sunday, October 14, 1962, I sat in the lobby of the Gurten-Kulm Hotel opposite the clerk wondering if any of the scientists would show up. I rejoiced when one after another trickled in. In fact, every one scheduled to be in Holland was present Monday morning at roll call. When a bearded, bearded Indian patriarch passed through the hotel entrance I was delighted. It was Prof. Amarjit Singh, University of Patiala, India, a man of profound wisdom and his country's foremost student of fluorosis. He turned out to be the soul of the conference and became one of my intimate friends.

Several scientists had requested an invitation to the conference through Bern University officials. They represented aluminum companies in Switzerland and France.

One of the Swiss scientists, Dr. E. W. Alther, the high caliber of whose work is recognized, had carried out extensive research on cattle;²³⁸ another is internationally known for his research in plant physiology. I considered it fortunate to have these men in our midst. Through their experience and background in fluoride research, I anticipated

stimulation of our discussions.

However, this did not materialize. One of the aluminum company representatives was constantly making notes. He must have taken down every spoken sentence from the beginning to the end of the conference. At no time did he make a single remark.

Near the close of the conference I confronted him: Why, with his extensive knowledge of the subject, I asked, had he failed to participate in the discussion. He was obviously embarrassed. He assured me that under no circumstances could he have taken part.

"Did your company give you orders to remain silent?" I bluntly inquired.

For want of a reply he became increasingly uncomfortable. Finally he seemed to have found the right answer for me. He insisted that he could not have carried his point among the scientists assembled there. He must have been aware that the industry's position would not withstand critical examination by scientists who were conversant with the genuine facts.

The spokesman for the French company acted differently. He repeatedly challenged the essayists. His reasoning was reminiscent of statements encountered in U.S.A. political fluoridation campaigns.

For instance, I showed a picture of an enlarged rabbit's heart experimentally poisoned by fluoride, side by side with a nonpoisoned control specimen. It was sent to me for presentation to the conference by the Japanese scientist, T. Takamori, of the University of Gifu.²³⁹ The representative of an aluminum corporation reasoned as follows:

"These changes in the rabbit's heart can't be due to fluoride. Our people in Vichy have been drinking water with a fluoride concentration as high as 8 parts per million for years. At no time have we seen enlarged hearts."

Although the heart of an experimental animal is bound to behave differently from that of a Vichy citizen, no studies

have been made to determine whether or not continuous consumption of high fluoride Vichy water has caused an increased trend to heart disease. Furthermore, for drinking, inhabitants of the town of Vichy have access to water other than that from the high fluoride Vichy Springs.

Another group of participants had received invitations through the University of Bern at their request. They represented Swiss citizens who had suffered damage from fluoride fumes. They symbolized the powerful struggle of the common people in Switzerland against their Titans of industry.

Parts of northern Switzerland along the Rhine and the Frick valley, near the towns of Rhinefelden and Mohlin, are contaminated by fluoride. The vegetation has been partially destroyed by fluoride fumes emanating from a nearby German aluminum factory on the opposite side of the Rhine River (Fig. 29a, b). For years constant litigation by local citizens against the company has been underway.

Many improvements have been introduced in the factory to reduce the hazard. However, the population is still confronted with the fluoride threat. Citizens have been antagonized by the company's scientists who attempt to minimize fluoride's harm. I was told that most veterinary physicians and scientists in the area have been engaged to carry out research and examinations for the company. Few scientists dare to speak against the powerful corporation for fear of being subjected to disparagement and economic pressure. It all had a familiar ring. Correspondence in my files shows that American farmers whose cattle have suffered fluoride damage are also hard put to find veterinary physicians to take care of their animals.*

The Curtien conference was most instructive and proceeded according to plan. It was confined to scientific evi-

* Cox, W. R., Portland, Ore., to Mrs. G.L.W. 3/7/57.—Mrs. E.J.P., Golden, Colorado, to G.L.W. 12/9/63.

dence on fluoride's effect. All references to fluoridation were avoided.

The program opened with a review of the pharmacological action of various fluoride compounds by one of the most brilliant scientists in this area of research, Prof. N. P. Buu-Hoi²³⁶ of the National Research Center in Paris. Prof. Buu-Hoi received the Cross of the Legion of Honor, France's highest award, in 1962, for outstanding research. He explained that there are two kinds of poisonous action in fluoride compounds: One is determined by the fluoride ion and the other by the remaining portion of the molecule. Accordingly, fluoride poisoning can exhibit a wide variety of manifestations depending upon the ions of the other minerals present in the fluoride compound.

The balance of the first morning was devoted to methods of fluoride analysis. Two outstanding German scientists with extensive experience, Profs. W. Wobler and W. Oelschlaeger of Stuttgart-Hohenheim pinpointed the many pitfalls involved in carrying out accurate fluoride analyses.

In the afternoon, Profs. E. Hupka and G. Rosenberger of the Hanover Veterinary School related their experience with fluorosis in domestic animals. They showed a film of fluorosed cattle from a fluoride contaminated area in Germany. The pitiful appearance of these animals, their extreme emaciation, painful stance and movements due to joint swelling and palsy of their hind legs were clearly evident.

A scientist from Holland, Dr. F. Spierings, Institute voor Plantenziektenkundig Onderzoek, Wageningen, showed that one of Holland's major industries, cultivation of tulips and gladiolas, has been adversely affected by fluoride in the air. Dr. L. Gisiger of the Swiss Government Agricultural Station at Liebefeld near Bern, and Prof. K. Garber, Staatsinstitut für Angewandte Botanik, Hamburg, Germany, likewise presented data on fluoride damage to plants.

The following day a symposium on how fluoride affects the calcium-phosphorus metabolism featured Prof. E. Uehlinger, the head of the Department of Pathology, University of Zurich, one of the world's outstanding experts in this area of research. He outlined the mechanism of fluoride's effect on the calcium-phosphorus balance and its action on bones and teeth.

Another symposium was concerned with mottled teeth. It was led by Dr. Ch. Leimgruber of Bern, a dental research scientist. My own contribution to this symposium was a review of the many abnormal conditions of the teeth with which mottling might be confused. Through the courtesy of B. G. Anderson, D.D.S., of New Haven, Conn., a pioneer in diagnosis of mottling,^{28e} I showed photographs of teeth which had been published in the A.M.A.'s *American Journal of Diseases of Children* in 1942. They demonstrated how to differentiate true mottling from other enamel defects. Prof. T. Takamori of Gifu University, Japan, who was unable to appear personally, had sent an account with pertinent illustrations of his ingenious classification of mottling. By taking into consideration the extent of the mottling, the appearance of the tooth's surface and its degree of discoloration, Takamori's classification provides an immediate clear appraisal of fluoride damage to a tooth.

Profs. T. Gordonoff and W. Minder presented their basic research on fluoride's interference with the function of the thyroid gland. Other detailed clinical reports of poisoning from water naturally containing fluoride were presented by Dr. G. Nalbone, of the U. of Palermo, Italy, and by Dr. W.P.U. Jackson, Pretoria, S. Africa. The highlight of the meeting was the lecture by Prof. Amarjit Singh, head of the Department of Medicine, University of Patiala, India. He illustrated his remarks with a motion picture on fluorosis in humans from natural fluoride areas. He presented a wealth of information, some of which was subsequently published in the May 1963 issue of *Medicine*.^{16f}

The Transactions of the Gurten Conference were about to be published in July, 1963, by a Swiss medical publisher under the editorship of Prof. Gordonoff of Bern. I had already seen the proof sheets. In September, Prof. Gordonoff notified me that the publishers had been obliged to abandon their work on the nearly completed book. Expenditures had already amounted to several thousand dollars.

Who defrayed this substantial cost already incurred by the publisher for printing the material, is not known. According to a Swiss spokesman, the company had been threatened with boycott. Swiss cities were in the midst of a fluoridation struggle reminiscent of U. S. battles. The *Transactions* gathered together a wealth of scientific data which are otherwise difficult of access and would take years for an individual to acquire. The data presented would have interfered with promotional efforts in Switzerland. The book was subsequently published by the German medical publisher Benno Schwabe of Stuttgart.^{28e}

My interest in this Conference had been inspired by my awareness of lack of communication between scientists regarding fluoride research and by my eagerness to explore new areas of this complicated and confused subject.

I learned at the Conference that my research had already provided much stimulation to other scientists. Moreover, the research which proponents had set up for the express purpose of countering my findings had brought forth new and significant facts.

I realized that a tedious and laborious uphill climb lay ahead.

CHAPTER FIFTEEN

SCIENCE AND SCIENTISM

An editorial entitled "Scientism, A New Blight" appeared in the April 14, 1962, issue of the *Journal of the American Medical Association*.

The editor defined "scientism" as "A parody or defeat of true science" "Grant-Getting by wisdom of application—A combination of pseudo-scientific pecuniary pederasty and integrated cooperative research, based all too often on irrelevant or misinterpreted data, compounded by mass computer techniques."

"Huge sums of money are spent," the editor asserts, "on doubtful, artificially blown-up, occasionally ridiculous projects." This "pseudo-science," he suggests, should be replaced with research by "clinical staffs and personnel who represent that sometimes forgotten man, the patient."

Had the editor referred to fluoridation research he could not have found a more glaring illustration of this "new blight."

Numerous meticulously executed statistical studies and epidemiological surveys published in scientific journals present a multitude of impertinent data. A host of articles dwell on how to promote fluoridation. Psychiatrists, social workers and nutritionists have written "scholarly" treatises analyzing the psychology of fluoridation opponents¹³² and how to neutralize their arguments: Yet, no studies are available dealing with individuals to prove fluoridation safe. He, the person suffering poisoning from fluoridated water, is indeed "The Forgotten Man."

It is easy to distinguish between objective publications on fluoridation and those written for promotional purposes. The latter exhibit certain earmarks readily spotted by the observer. They invariably begin, or end, with a plug for fluoridation. For instance, a learned article by Dr. A. L. Russell, head of the Statistical and Biometric Branch of the National Institute of Dental Research begins with the following sentence:

"It is now generally conceded that children, twelve to fourteen years of age, who have been exposed to fluoride-bearing communal waters during their entire lifetimes, have a more favorable dental caries experience than individuals of the same age who have always lived in areas where the community water is fluoride-free."²⁸⁷ This was in 1949, only four years after the experiments in Grand Rapids, Mich. and Newburgh, N. Y. were initiated.

Promotional research disregards whatever findings do not support the fluoridation thesis. It labels all data unfavorable to fluoridation "unconvincing" or "unscientific."

This kind of "science" should not be confused with the so-called science which is based upon arbitrary statements made at public hearings or appearing in newspapers for lay consumption. The following are typical examples:

Fluoridation is safe because millions are drinking fluoridated water—

Physicians in Grand Rapids have not reported illness due to fluoride in water. (This is held up to the public as "proof" that fluoridation causes no ill effect.)

Vitamin A and table salt are poisonous too in large amounts*—

"To produce even the mildest symptoms of fluoride poisoning would demand that the victim swallow two

* The degree of toxicity of a substance depends upon the latitude between a harmless and a toxic dose. With fluoride the margin of safety is extremely narrow or nonexistent.

and a half bathtubful of properly fluoridated water, during a single day."^{288*}

Such slogans originate with public relations counsellors, not with scientists. Nevertheless, through constant repetition, they have found their way into scientific journals where they have influenced a segment of the dental and medical profession.

"Scientism," as indicated in the A.M.A. editorial is different. It pertains specifically to elaborately and well executed research by scientists of the highest caliber, presented in leading scientific journals, supported by vast grants from the federal government and from industry. This research appears thoroughly convincing on the surface. Careful scrutiny and a solid research background on the subject are required to detect its shortcomings:

1. In some publications one or two sentences contain the key fallacies.
2. In others the design of the study is defective.
3. In some, data on individuals are either lacking or disregarded.
4. In others the author's conclusions ignore important data contained in the text.
5. Scientists make statements which contradict their own research findings.

1. The Crucial Sentence

In the *American Journal of Roentgenology* of 1951, three fluoridation proponents, Drs. E. J. Largent, P. S. Bovard and F. F. Heyroth,²⁸⁹ reported X-ray evidence of fluoride poisoning in five out of sixteen factory workers

* This refers to immediate acute poisoning from a single dose which is not pertinent to fluoridation. The hazard of repeated persistent intake of minute amounts of fluoride for months and years is at issue.

exposed to fluoride. Except for the changes in bones, they asserted that these people had not been harmed. This research is often quoted as evidence that bone changes, of the kind encountered in high fluoride areas and in industry, are never associated with harm elsewhere in the human organism and therefore have no significance.

Careful examination of this article reveals a single sentence which tells the story:

"Detailed clinical examination of the workmen in these plants could not be carried out and therefore no other data are available for consideration."

Actually, without thorough clinical investigation these scientists had no basis for their arbitrary statement that the 5 workers suffered no ill effect other than that noted in X-rays.

In another study, one sentence made the difference between a valid and a misleading piece of research. It was carried out by a P.H.S. team led by Dr. E.F. Geever, now of Philadelphia, published in *Public Health Reports*,²⁹⁰ 1958.

These scientists investigated the microscopic appearance of bones from thirty-seven persons who had lived in areas where the water naturally contains 1 to 4 ppm of fluoride. They compared these bones with bones of persons from communities with less than 0.5 ppm of fluoride in water and found "no significant differences" in the two groups. They concluded that fluoride naturally occurring in drinking water does not damage bones.

On page 722 one finds the following pivotal sentence:

"Those (persons) with chronic illness and diseases known to affect bone structures were excluded." Among the diseases excluded, the authors specifically named two which are frequently associated with chronic fluoride poisoning, namely parathyroid and kidney diseases.

Thus the cases which warranted special attention and which were most likely to have suffered ill effect from fluoride

were omitted from the study. Had they been included the authors would not have arrived at the conclusion that fluoride naturally in water causes no harm.

Another widely propagated promotional study which omitted the very cases which were most likely to have suffered ill effect from drinking fluoridated water is a survey in the pilot city of Newburgh, N. Y. (fluoridated in 1945), published in the *Journal of the A.M.A.* in 1956. It was designed to "prove" that fluoridation is not harmful to kidneys. A team of public health officials led by Dr. E. R. Schlesinger²⁴¹ of the New York State Dept. of Health examined urine specimens of 900 children for blood cells, albumin and casts, which are evidence of kidney disease. The key sentence in this study on page 21 is as follows: "No specimens were taken if there was any history of clinical illness, no matter how mild, during the previous two weeks."

Acute episodes of bowel disorders, bladder and lower kidney tract disease (pyelitis) are not uncommon in the beginning stage of chronic fluoride poisoning. Otherwise it is a nonspectacular progressive illness. Many reasons account for such sudden acute flare-ups.

For instance, on a hot day, a person may consume fluoride in excess because he drinks many times his usual daily amount of water. On such a day an acute episode of illness is liable to occur whereas damage to kidneys may not be detectable on other days. By eliminating all children who had suffered an acute illness within two weeks prior to the examination, the authors defeated the purpose of their study, namely to detect early kidney damage from fluoridated water in children.

Another deficiency often encountered in promotional research is illustrated by the P.H.S. study of Drs. J. R. Herman, Brian Mason and Igo Light in the *Journal of Urology*⁵³ Oct., 1958. It categorically concluded that the "fluorine content of the (kidney) stones is not related to sys-

temic fluorosis as determined by the fluorine content of the tissues." This implies that the general health of persons whose kidney stones contained an unusually high concentration of fluoride—as much as 1800 ppm—was not adversely affected by fluoride. Page 266 in the article contains the key to the fallacy of the authors' conclusion: "None of the tissues (of vital organs) revealed fluorine contents elevated significantly above the normal established in the literature."

For "normal fluoride levels established in the literature" Dr. Herman and associates refer the reader to three publications, one by Drs. A. Gautier and P. Clausmann of Paris,²⁴² France (1913), one by Drs. A. P. Gettler and L. Ellerbrook of Philadelphia¹⁹⁴ (1939) and the book by Roholm⁸² (1937).

Upon checking the fluoride content of the organs covered in these three studies, one finds exactly the reverse of what Dr. Herman and co-workers reported. As shown in Table 16 normal fluoride levels in kidney tissue proved to be far lower than those encountered by the Herman group.

Table 16
NORMAL FLUORIDE LEVELS IN KIDNEY TISSUE WITH WHICH
DR. HERMAN COMPARED HIS DATA

	PPM
Gautier and Clausmann ²⁴²	2.6 (dry)
Gettler and Ellerbrook ¹⁹⁴	0.56 - 0.78 (wet)
Roholm ⁸²	11.0 (dry)
Herman ⁶⁸	181.0

Herman's 181.0 ppm fluoride value in kidney tissue is extraordinarily high and in marked contrast with those found by the three authors whom he quoted. In his article in 1956,²⁰⁸ on page 190 in the *Journal of Experimental Medicine*, 0.78 ppm had been given as the "normal" fluoride level for kidneys, 11.6 ppm for kidneys acutely poisoned. The high value of 181 ppm should have stimulated a follow-up investigation by himself and his P.H.S. collaborators to

determine whether the high fluoride storage had adversely affected the function of the kidneys and the patients' general health.

These examples point up the need for painstaking examination of all details contained in reports by exponents of fluoridation before accepting their conclusions on this confused subject.

2. Faulty Design of the Study

The most striking deficiency in proponent studies is the inadequacy of controls. "Controls" are normal individuals furnishing data under normal conditions used as a standard of comparison for the new findings.

It has already been shown that the erratic action of fluoride itself renders it extremely difficult to obtain controls in the true sense of the term: It is virtually impossible to determine how much fluoride has entered a person's system on a long term basis either through drinking water or through other sources; how much is being stored, in which organs it is being deposited and through which channels it is being eliminated. Even in animal experiments for which controls are easier to obtain than for humans, scientists have struggled in vain to secure reliable controlled data.

In the proponent research it is customary to compare data from a high fluoride with those from a low fluoride area. The latter are considered "controls." Again it is necessary to refer to Dr. Herman's data from nonfluoridated New York City (0.1 ppm).

Table 17
FLUORIDE IN TISSUES AND ORGANS ACCORDING TO
DR. HERMAN AND ASSOCIATES

	PPM
Skin	10 - 290
Prostate	0 - 86
Bladder	0 - 185
Kidney	0 - 181
Nails	10 - 186
Fat	0 - 145
Hair	13 - 171
Kidney Stone	5 - 1575

Table 17 demonstrates that in some persons organs are free or practically free of fluoride, whereas in others there is substantial accumulation. This is true whether one resides in a nonfluoridated city like New York or in a fluoridated one. Fluoride determinations of tissue from autopsies in nonfluoridated Detroit (0.1 ppm) confirm Herman's observations. Therefore data from a community where water is practically "fluoride-free" does not constitute a genuine "control" for data from fluoridated communities. At the present state of our knowledge, scientists are not yet aware why and under what circumstances high accumulations of fluoride occur in organs other than bones and teeth.

With this in mind, the widely publicized statistical study by the P.H.S. team, T. L. Hagan, M. Pasternack and O. C. Scholz, in *Public Health Reports*, Vol. 69, ²⁴³ is of relatively little value.

These P.H.S. scientists compared mortality rates for cancer, kidney, liver, intracranial lesions and heart disease in natural fluoride towns with those obtained from thirty-two "nonfluoride control" cities. They found "no statistically significant differences" for the five diseases in the two groups of cities. They disregarded intake of fluoride through food, drugs and air contamination.

The design of this survey is further confused because some of the so-called nonfluoride "control" cities had considerable fluoride in their water supplies, even more than the "natural fluoride" cities with which they were compared. Therefore, the authors' conclusion that fluoridation is safe because there were "no significant differences" in mortality rates in the two groups of cities is fallacious. Nevertheless this study constitutes a bulwark of fluoridation promotion.

The matter of faulty controls is even more vividly illustrated by a study by one of the country's most outstanding pharmacologists, Dr. H. C. Hodge of the University of Rochester, N.Y., and co-workers.²⁴⁴ Its purpose was to com-

pare urinary fluoride elimination in persons with normal kidneys with that from persons known to be afflicted with kidney disease, before and after fluoridation was initiated in Rochester, N. Y. Data in kidney patients were compared with data from so-called "normal" individuals who served as "controls." In this report published in *Archives of Industrial Health*, Vol. 11, page 9, 1955, the individuals designated as "normal" ranged in age from seventy-four to ninety-seven years. There is a consensus among physicians that at this advanced age kidneys are rarely, if ever, normal because of the arteriosclerotic and other senile changes. It is, therefore, not surprising that Dr. Hodge found no significant differences in the two groups.

Yet, promoters of fluoridation utilize this particular study to support their claim that fluoride does not interfere with kidney function. Had Dr. Hodge and associates selected young persons with normal kidneys, they would have found significant differences in elimination of fluoride by normal and diseased kidneys.²¹⁴

A study by Dr. O. M. Derryberry, health director of the Tennessee Valley Authority project, and co-workers²¹⁶ furnishes another demonstration of the difficulties encountered in setting up adequate controls in fluoride research. It was published in *Archives of Environmental Health* April, 1963.

Workers in the TVA phosphate areas are constantly exposed to inhalation of fluoride fumes and dusts, a constituent of phosphate rock. Dr. Derryberry's group compared the health of seventy-four workers "exposed" to fluoride with that of sixty-seven individuals who presumably were "unexposed." The latter served as so-called "normal" controls. The principal criterion for the exposed group was a "consistently high urinary fluoride excretion (elimination)" during their employment. This study was carried out most meticulously with the best tools of modern science: Each worker had a complete physical examination,

numerous laboratory tests and X-rays.

In the seventy-four "exposed" workers the average daily fluoride elimination through the urine was 4.6 ppm; in the sixty-seven "control" supposedly "nonexposed" workers elimination averaged 1.15 ppm. From the latter figure one must conclude that those presumed to be unexposed were also exposed to fluoride, although to slightly less than those under study.

On examining the detailed data we find that each worker had numerous urinary fluoride determinations, one of them as many as seventy-four. A worker in the "exposed" group, for instance, as indicated on page 514 of the article, eliminated on one day as little as 0.2 ppm, on another as much as 7.9 ppm. For the group of "unexposed" workers the authors presented no breakdown for each individual. Only the averages of all determinations of fluoride in urine of all sixty-seven so-called "unexposed" workers were reported.* It was therefore impossible to compare elimination of fluoride in "exposed" and "unexposed" individuals. These and other details in this research demonstrate that there was considerable overlapping in the composition of the two groups. Here again a thoroughly executed and elaborate study is of little significance because of an overall faulty design.

The same basic fallacy underlies the mainstay of the research designed to prove fluoridation safe, the survey of Bartlett and Cameron, Texas,²¹⁷ where water contained fluoride naturally at 8 ppm and 0.4 ppm, respectively.

The health of one hundred sixteen persons who had resided in Bartlett for more than ten years was compared with that of 113 in Cameron. All individuals underwent elaborate examinations similar to those in the Derryberry studies.

* Averaging of averages constitutes another fault frequently encountered in fluoride research. This criticism applies especially to statistics which constitute the basis for the claim that the incidence of tooth decay in fluoridated cities has been reduced by 65 per cent.

Cameron is close to Bartlett. No information is available regarding the extent to which persons in Cameron, the control city, were exposed to fluoride from sources other than water, such as food grown in the area and contaminated air. Western Texas, where both cities are located, is known as a high fluoride area.

The survey reported no significant differences in the examination and laboratory findings in the two groups. Nevertheless, in both cities there was an unusually high incidence of cataracts, bone changes, arthritis and hearing disturbances. However, no comparison of these diseases was made with their overall incidence in the U.S.A.

Crippling arthritis and partial deafness have been linked with chronic fluoride poisoning in a survey by the Indian scientist, A. H. Siddiqui, in the *British Medical Journal*,¹⁶⁶ Dec. 10, 1955, page 1408.

Examination of the data presented in the Bartlett-Cameron report shows that the mortality in Bartlett was 265 per cent higher than in Cameron. This important fact was given no attention in the authors' conclusion.

The Bartlett survey demonstrates yet another fallacy in fluoride research: Data on only one hundred sixteen persons are used as the basis for the assertion that fifty million people in the U.S.A. drinking fluoridated water need not anticipate harm.

If 1 in 117 were to suffer ill effect from fluoride in water, the number of those so afflicted among the fifty million U.S. citizens would be 427,350 — a sizable incidence. Thus the sampling in the Bartlett survey was far too small to assure the safety of millions of persons drinking fluoridated water.

3. No Studies on Individuals

Referring again to the A.M.A. editorial on "Scientism" and the absence of studies on individuals whom the editor so aptly characterizes as "the forgotten man," a case in

point is worker #54 mentioned in the Derryberry study previously discussed. This worker with skeletal fluorosis eliminated during one day as much as 44.0 ppm of fluoride in the urinary specimen, on another only 4.0 ppm. In this case the available data clearly point to serious damage from fluoride. Examination and laboratory findings carried out on the day of his high fluoride elimination would, undoubtedly, have been revealing.

There are many "forgotten men" in fluoridation research: P. H. S. scientists I. Zipkin¹⁷³ and associates reported in *Public Health Reports* of Aug. 1958, page 732, the chemical composition of bones of sixty-nine persons from communities with fluoride in water ranging from 0.1 to 4 ppm. They observed an increase of fluoride in bones proportional to that in drinking water.

Yet, in one of their cases from a low fluoride town (0.4 ppm) they detected in the breast bone (sternum) an unusually high fluoride content, namely 2290 ppm. Fluoride in breast bones of the other cases in that town ranged from 400 to 1010 ppm.

Such an exceptional case in a low fluoride area should have been subjected to a special investigation which might have provided significant data. Instead, this case was eliminated from the study.

4. Unwarranted Conclusions

Two studies have come to my attention which were carried out on individual patients at the National Institute of Dental Research in Bethesda, Md. They demonstrated how partial information can be misinterpreted and lead to faulty conclusions.

In *Public Health Reports*,²⁴⁸ Vol. 73, page 741, 1958, Drs. F. J. McClure, H. G. McCann and N. C. Leone compared the skeletal fluoride content of two women who died under similar circumstances. One, seventy-four years old, had resided in Washington, D. C. (0.2 ppm fluoride in wa-

ter); the other, aged seventy-eight, in Bartlett, Texas, (8 ppm).

The Washington, D. C., person died of a heart attack, the one from Bartlett of a cerebro-vascular accident (stroke). The bones of the Bartlett woman contained about 6000 parts per million of fluoride; those of the Washington, D. C., woman about 1/8 of that figure or around 750 ppm. The former showed more calcium and other minerals in bones than the latter.

The study concluded that "no unusual findings of impairment of health or well being or malformation of skeletal tissue or malfunction generally" were noted in the Bartlett case although her bones contained eight times more fluoride than those of the one from Washington, D. C.

Here, too, a conclusion was drawn without adequate laboratory tests or clinical investigation during the lifetime of the patient to determine whether and to what extent fluoride had interfered with her general health. There is no record of repeated blood and urinary tests for fluoride nor of double blind studies with fluoride-containing and fluoride-free water prior to her death. Without such data it is impossible to ascertain whether or not this patient suffered ill effect from fluoride in Bartlett while she was alive.

To rely upon the fluoride content of the person's bones as a criterion of a person's physical health and well being is misleading. Prof. A. Singh²⁴ reported in ten cases of *advanced crippling fluorosis* an average of 2720 ppm fluoride content of bones, which is far below the 6000 ppm which the P.H.S. team found in the Bartlett woman.

The other case at N.I.H., Bethesda, Md., of which I learned was not "forgotten." A fifty-six year old housewife was thoroughly studied by the National Institute of Dental Health. I obtained her record through the courtesy of the patient's family physician who wishes to remain anonymous.

She developed severe abdominal cramps and diarrhea, an early sign of fluoride poisoning, within two days after fluo-

ridation was initiated in Washington, D.C., in 1952. This condition persisted with periodic aggravation and temporary improvement up to April, 1959, when the woman was admitted as an out-patient to the Institute. In addition to the abdominal pain she experienced increasing eye disturbances and occasional blurring of vision during the course of her illness.

Four eye specialists had been unable to give her an adequate explanation of her symptoms nor were they able to relieve her condition. One of her eye physicians suggested that she might be allergic to chemicals. As the disease progressed, she developed arthritis which started in the finger joints.

Her symptoms became distinctly aggravated when she drank water unaccompanied by food. Thus, for the first time her attention was drawn to fluoridated water. She and her husband, a physician, soon related aggravation of her disease to drinking fluoridated water and eating vegetables cooked with Washington, D. C., fluoridated water.

Objectively the patient had shown evidence of a progressive loss of vision and of beginning arthritis. These are some of the early symptoms which I described as characteristic of the beginning stage of fluoride poisoning.

Blind studies at the Institute were initiated by providing the patient during the first week, without her knowledge, with fluoride-free water. At this time her daily urinary fluoride level ranged from 0.4 to 0.7 mg with a mean of 0.54. During the second week, again unbeknown to her, fluoride was added to her drinking water in a quantity sufficient to make the urinary fluoride rise as high as 6.7 mg (with a mean of 3.82). She noted no difference in the severity of her symptoms.

On the basis of these procedures, the patient was informed by the Institute that her symptoms were not related to fluoride.

This case again illustrates how difficult it is to establish

proper controls in studies of this kind and how the sole dependence on a laboratory procedure, the urinary elimination of fluoride, can lead to a faulty conclusion:

During the first week, while the patient was eliminating relatively little fluoride,* she continued to be ill from the previous intake of fluoride. During the second week, while unbeknown to herself she was drinking fluoridated water, she eliminated larger amounts of fluoride in the urine but the change in her symptoms was not impressive.

In my experience, weeks and months are ordinarily required for stored fluoride to be sufficiently eliminated from the system to enable patients to regain their health. Had the test been initiated after she had completely recovered from her illness and after her system had adequately disposed of excess accumulated fluoride, the result of the test would undoubtedly have been different. In other words, a proper baseline had not been established in this patient, a prerequisite for controlled studies on individuals.

The same fallacy characterizes a study by a Stanford University dermatologist, Dr. Ervin Epstein, which is being widely publicized by the P.H.S.¹²⁸

Fluoride, like the other halogens bromide and iodide, has been identified with the causation of acne by a German clinician.²⁸⁰ Presumably in order to disprove this, Dr. Epstein gave twenty patients with acne 1 mg of fluoride per day for one to eleven weeks, as reported in the *Stanford Medical Bulletin*,²⁸¹ Vol. 9, p. 243, 1951.

Dr. Epstein did not wait until the acne had subsided in his patients before starting his experimental administration of fluoride tablets. In other words, he failed to establish a baseline. Because the drug did not aggravate the existing acne eruptions, he incorrectly concluded that fluoride does not cause acne. Moreover, while administering

* During the last three days of the first week, at which time she was not using fluoridated water, the daily urinary fluoride values were higher than during the first four days, namely, 0.53, 0.67 and 0.7.

fluoride, he simultaneously treated the acne with a special diet, "local treatment," acne toxoid (vaccine) and ultraviolet light. Had fluoride aggravated the condition, the other measures would have acted as antidotes.

Interestingly, one of Dr. Epstein's twenty patients developed a severe generalized allergic eruption on face, hands and neck, which necessitated discontinuance of the tablets. This is the kind of allergic reaction which Dr. Reuben Feldman of Passaic, N.J., described in the *Journal of Dental Medicine*,²⁸² Vol. 16, 1961, in 1 per cent of pregnant women and young children to whom he administered fluoride tablets and which I recorded, in 1958,²¹⁸ in my own patients who had been drinking fluoridated water.

Another shortcoming in the promotional research on fluoridation is the downgrading of some of the most significant contributions to the fluoride literature:

In a comprehensive article in the *Journal of Occupational Medicine*,²⁸³ February, 1960, page 92, the late Kettering Laboratory scientist, Frank Princi referred to the research by Prof. Tokio Takamori and his co-workers at the University of Gifu, carried out in a high fluoride area of Japan. Dr. Princi casually dismissed this work (page 95) on the basis that "none of these observations has ever been confirmed by any other investigator." He must have been aware that often years pass before new data in medicine are confirmed.

Dr. Princi disregarded another valuable clinical report by Dr. A. H. Siddiqui in the *British Medical Journal*¹²⁹ of 1955 on thirty-nine cases with advanced crippling fluorosis from drinking water in India by stating:

"In the study of these cases no attempt was made to exclude other diseases and the author admits that all those under study were in the poorest state of nutrition and probably suffered from severe avitaminosis (vitamin deficiency)."

Dr. Princi's reflection on Dr. Siddiqui's competence as a

diagnostician sharply contrasts with his high praise for the work of his own colleagues at the Kettering Laboratory. Without questioning, he accepted Dr. Largent's assurance that the five factory workers with skeletal fluorosis, previously mentioned,²³⁸ suffered no systemic damage by fluoride, although Dr. Largent himself frankly acknowledged that the workers had not undergone a detailed examination.

In order to support his case for fluoridation, Dr. Princi resurrected a highly dubious piece of work by Drs. M. H. Black and I. S. Kleiner which appeared in the *New York State Journal of Medicine*²⁵⁴ in 1949. These clinicians administered sodium fluoride to seventy patients suffering from malignancies in order to determine whether fluoride would retard the development of these diseases. This study convinced Dr. Princi that doses of fluoride up to 320 mg daily are safe for adults.

However, an examination of the Black-Kleiner report discloses that some of their patients—the number is not stated—suffered stomach and bowel disturbances which are early signs of acute fluoride poisoning. It was necessary to administer an aluminum salt as an antidote simultaneously with fluoride to buffer fluoride's poisonous action. This precluded the recognition of other ill effects from fluoride.

Dr. Princi's promotion of fluoridation likewise relied upon a survey by Drs. C. A. Stevenson and A. R. Watson in the *American Journal of Roentgenology*,²⁵⁵ Vol. 78, page 13, 1957. Their review of 170,000 X-ray films, principally from high fluoride southwestern states, revealed only twenty-three cases with skeletal fluorosis. Because of this low incidence, the authors reasoned that fluoridation must be safe.

As already pointed out, of 237 individuals in the Bartlett-Cameron, Texas, survey with 8 ppm and 0.4 ppm fluoride in water, respectively, twenty-one cases of bone changes (fluorosis) were identified. In other words, approximately

the same number of cases were recognized among the 237 persons of the Bartlett-Cameron survey as Dr. Stevenson reported upon examining 170,000 from the same and nearby areas.

This extraordinary discrepancy may be due to the fact that minor abnormalities were tabulated in the Stevenson study as "normal." Scientists, who encounter inconspicuous abnormalities frequently, are inclined to minimize their importance. They fail to realize that frequency of occurrence does not render an abnormal condition normal.

Neglect of inconspicuous findings is characteristic of other phases of fluoride research. Fluoride is being stored in everybody's body. With advancing age, greater amounts accumulate not only in bones, but also in connective tissue, in ligaments, joints and in blood vessels.²⁵⁶ Such hardening or calcification has become so widespread that many physicians fail to recognize it as a disease process.

Little is known today about the part which fluoride plays in what the medical profession and the public accept as the "normal" process of aging.

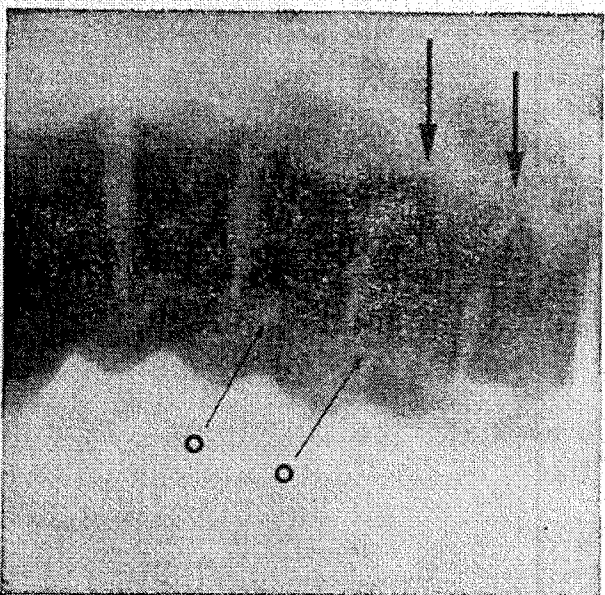
Drs. H. C. Hodge and F. A. Smith at the University of Rochester, N. Y., found unusually high fluoride levels in the aortas, the main artery of the heart,²⁵⁶ as reported in the *A.M.A.'s Archives of Industrial Health*, Vol. 31, 1960. The increase was roughly proportionate to the person's age.

Drs. G. K. Stookey and J. C. Muhler in the *Proceedings of the Society for Experimental Biology and Medicine*,¹⁵⁰ Vol. 113, 1963, showed that under certain conditions fluoride enhances the deposition of calcium in kidneys, livers and hearts. Calcium deposits are bound to damage these organs.

In my own series of analyses of twenty-two aortas for fluoride, I have observed high levels in calcified (hardened) arteries.

Fluoride hardens teeth and bones. Whether or not it con-

"POKER SPINE"



X-ray in spinal fluorosis. In addition to excess calcification of the bones (darkened areas), the ligaments connecting the spinal bones are calcified (arrow), causing stiffening of the spine. In the areas marked O (openings between spinal bones) the passageways of nerves, new bone formation encroaches upon nerves causing pain and palsy in arms and legs.

Fig. 30

tributes to hardening of arteries rendering them more brittle and breakable is a question which requires further studies.

Similarly, calcifications in ligaments and in the vicinity of joints lead to arthritis as the result of persistent fluoride intake. This has been demonstrated frequently in natural fluoride areas. Like hardening of arteries, calcifications in

ligaments are often looked upon as diseases of old age. To what extent fluoride enters into this kind of aging process is an important question.

5. Contradict Own Findings

Noteworthy in the promotional scientific literature are statements made by scientists which contradict the results of their own research:

After Dr. Armstrong had published a reinvestigation of his original data which unequivocally proved that enamel of sound and carious teeth do not differ in their fluoride content, he stated according to the *Minneapolis Tribune* on Dec. 13, 1964, that "Sound teeth contain more fluoride than decayed teeth."

Drs. J. H. Shaw and R. F. Sognaes¹⁹ of the Harvard School of Dental Medicine noted that, in rats during tooth development, 6 ppm of fluoride added to the diet did not prevent tooth decay; 25 ppm only partially prevented it. Yet, the authors dismissed these important findings by categorically declaring that their results do not apply to humans.

Drs. R. L. Maurer and H. G. Day, biochemists at the University of Indiana, established^{20a} that fluoride is not a dietary essential and that "fluorine may not have any value in nutrition or even in the maintenance of dental health." Later in their article they reversed their stand with respect to fluoride's effect on teeth: "Its (fluorine's) value in the body," they maintained, "is *apparently* limited to the promotion of resistance to dental caries" (*italics mine*).

In a typewritten report February 23, 1959, to the Atomic Energy Commission Dr. F. W. Lengemann, Division of Chemistry, School of Biological Sciences, University of Tennessee, Memphis, stated: "Fluoride... increased the strontium to calcium ratio (in growing bones)." In other words, in the presence of fluoride more radioactive strontium — the potentially dangerous air pollutant — is stored

than without it. Yet, his published report which subsequently appeared in the *Journal of Biological Chemistry*²⁰⁸ dealing with the same experimental data concluded: "Fluoride had no effect on the strontium to calcium ratio."

In 1963 Dr. Lengemann carried out new experiments from which he concluded that 1 ppm of fluoride in water had no effect upon retention of radioactive strontium and calcium in the skeleton of young rats, but acknowledged that these studies "are still not ideal for predicting the effect of fluoridated drinking water upon the retention of Strontium 90 in bones of young children."^{209a}

One wonders how much the objectivity of researchers has been tarnished by unrelenting promotional efforts.

In the November, 1964, issue of the *Massachusetts Physician*,^{256b} the official publication of the Norfolk District Medical Society, an editorial entitled "Civil Liberties" stated that fluoridation involves the individual's right to take or refuse medication. Yet, in January, 1965, an editor's note following a promotional letter by Dr. F. J. Stare said: "It (fluoridation) is *not* a civil liberties issue."

News releases are constantly being issued for the purpose of convincing the public and the professions of fluoridation's efficacy and safety. Although they create the impression that proof is available, the assertions are not supported by facts.

For instance, on Nov. 1, 1963, the *Hartford Courant* reported the statement by Dr. Paul Rosahn, New Britain pathologist, that fluoridation may be a "factor in prolonging life." When asked for substantiation, D. W. Coston, Deputy Assistant Secretary for Legislative Services, Dept. of HEW, stated on Jan. 16, 1964, that Dr. Rosahn's remarks were "based on subjective impressions, not on objective data."

In the *Des Moines, Iowa, Register* of January 2, 1962,

Dr. L. D. Samuels of the U. S. P.H.S. was quoted as saying that fluoride reduces the amount of radioactive strontium absorbed by teeth and bones. Therefore, fluoride provides protection against radioactive fallout, the release claimed. When asked where his research had been published, Dr. Samuels stated on January 8, 1963: "I don't expect to have any significant data until later this year. Newspaper stories of the study have not unexpectedly exaggerated the progress which has been made." On May 10, 1965, Dr. Samuels stated again that he has not, as yet, analyzed strontium uptake.

J. M. Dunning, D.D.S., in the respected *New England Journal of Medicine*, January 7, 1965, which reaches a large segment of the medical profession, referred to "studies" by A. L. Russell, D.D.S., which contradict Dr. Rapaport's observations that the incidence of mongolism is related to the fluoride content of drinking water. When Dr. Russell was asked for details about the research he had carried out on this question, he acknowledged February 3, 1965, that he was merely expressing his opinion and referred to views of other scientists who have done no research on the subject.

I have outlined here but a few of the many glaring inadequacies contained in scientific publications which are constantly cited as the "overwhelming mass of evidence" proving fluoridation absolutely safe:

Lack of proper controls; neglect of the individual; disregard of proven facts and/or omission of important data; acceptance as normal or inevitable that which actually constitutes ill effect from fluoride; lack of objectivity; failure to seek free and open critiques; premature publicity on flimsy, unconfirmed evidence; reliance on views and opinions—these are the fallacies which characterize the current state of fluoride research and constitute serious roadblocks to progress.

When the A.M.A. *Journal's* editor defined "Scientism"

he omitted one of its principal characteristics, namely, the fact that this kind of "Science" is undebatable and incontestible. Proponent scientists and the A.D.A. issue the statement that no controversy exists* on this obviously controversial issue.

When exponents of fluoridation, university professors, statisticians, biochemists and clinicians consider "the mass of scientific evidence" so "overwhelming" that a subject is no longer debatable, Scientism takes over where Science should reign.

* Patton, C.H., president of the Amer. Dent. Assoc. in his address at the 91st annual scientific meeting of the California Dental Association, San Francisco (*Examiner* April 17, 1961) According to the Los Angeles Times of May 11, 1965, Dr. Harold Hillenbrand, Secy. of the American Dental Association, again called fluoridation no longer "scientifically debatable".

CHAPTER SIXTEEN

IN COURT

One of the most venerable buildings in Europe is the old courthouse in Dublin, Ireland, called "The Four Courts" (Fig. 32). It is a majestic stone structure built late in the 18th century in Renaissance style. From the far distance its massive central colonnaded dome attracts the visitor's eye. Wings enclose two courtyards which open to the river. Some of the columns show battle scars from the Irish liberation war of 1921 to 1922.

On my return from Bern, Switzerland, I had a conference in this building with four attorneys. They were representing Mrs. Gladys Ryan, Dublin housewife, in a law suit against the Irish Minister of Health and The Attorney General of the Irish Free State.

In 1960, the *Oireachtas*, the Irish national parliament, had passed an Act making the addition of fluoride to all public drinking water supplies mandatory. Mrs. Ryan was challenging the constitutionality of this Act. She retained Mr. Richard Ryan (no relation) as solicitor. Mr. Ryan is a member of the Dublin Corporation (city council) and of the Irish Dail (pronounced Doyle), the lower House of Parliament.

After Dublin Corporation voted against fluoridation, the Minister of Health threatened to abolish the Corporation unless its members complied with the Fluoridation Act. Not wishing to be thrust out of office they voted again, this time 25 to 15 in favor of fluoridation.

THE FOUR COURTS, DUBLIN

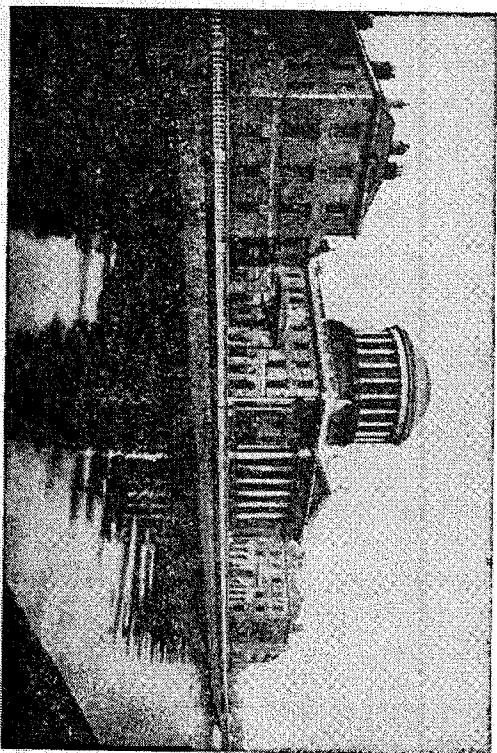


Fig. 32

In Ireland there are two classes of lawyers. The client employs a solicitor who works up the case and rounds up the evidence but does not take part in court proceedings. At the trial the case for plaintiff or defendant is conducted by barristers and senior counsellors. A barrister may, at his option, become a senior counsellor after years of practice and after an examination. In a trial, the barrister is instructed by the solicitors. Barristers and senior counsellors are employed as "free lance" individuals, not as partners or members of a firm.

Mr. Richard Ryan was able to secure the finest legal talent in Ireland to represent the plaintiff, Mrs. Ryan: Mr. Seán (pronounced Shawn) MacBride, S. C., Mr. Tom Connolly, S. C., Mr. McGilligan, S. C. and Mr. Ben O'Quigley, B. L. The defense attorneys were the Attorney General, Mr. O'Keeffe, S. C., assisted by Mr. McGonigal, S. C., Mr. W. D. Finlay, S. C., and Mr. Seán Butler, S. C. They were instructed by the Chief State Solicitor.

The trial was scheduled for March 14, 1963, before the high court with Mr. Justice Kenny, the sole judge. At the outset, it was clear that the decision would be appealed to the supreme court of fifteen members. In our Supreme Court a printed brief is submitted. Only a very short oral presentation and argument is permitted. In Ireland, the entire record of the testimony is read in court and the exhibits examined, after which the case is argued by counsel for each party. This process requires several weeks.

Our Conference took place in the library room of "The Four Courts" building. Senior attorney, Mr. MacBride, presided. At issue was a provision of the Irish constitution which maintains that parents are solely responsible for the health of their children. This is in contrast to the education of a child which is the state's obligation. The five attorneys discussed with me all details of the proposed suit. My function was to advise them whom to invite as expert witnesses and to furnish scientific references which would enable them to become informed on this vast and complicated subject.

I pointed out the difficulties of their undertaking. In U. S. court actions, in Chicago, in Evansville, and in St. Louis, the primary question was always the same: whether or not fluoridation is safe. The same difficulties would probably prevail in Dublin. In the U. S. suits, expert witnesses on the opponent side are hard to come by for the following reasons:

1. The vast preponderance of research on fluoride is sponsored by corporations and the P.H.S. In fact, few American scientists have like myself carried out research independent of such sponsors.
2. Those who have produced research with results unfavorable to fluoridation, hesitate to appear as witnesses because of threat of reprisals, especially if they are connected with a university. It would have been impossible to get such American scientists with research experience as

H. V. and M. C. Smith, F. deEds, V. O. Hurme and Alfred Taylor on the witness stand. Some of them had already been subjected to disparagement. They could scarcely be expected to further jeopardize their position which in the last analysis depended upon grants from the Department of Health, Education, and Welfare. This dearth of opponent scientific testimony was the major reason for the unfavorable decisions in U. S. courts.

3. In our own country very little money was available to opponents for a court action. I myself had defrayed my personal traveling expenses whenever I appeared in court since no funds were forthcoming for this purpose. At no time did I ever receive any remuneration for my testimony. Conversely the proponents could muster numerous scientists to give expert testimony. Almost unlimited corporation money and federal funds were available to them.

4. Moreover P.H.S. officials have means of showing their appreciation other than through financial remuneration. The P.H.S. is the most powerful medical agency in the world in terms of scientific talent and political know-how. Its officials can make or break a scientist. After all, any law suit on fluoridation, whether in the United States or elsewhere in the world, is directed against the U.S.P.H.S., which sponsored fluoridation prematurely before research had been carried out to prove its safety.

5. In all U. S. trials, proponent witnesses could remain on hand as long as they were needed, continuously advising their attorneys on scientific questions pertaining to the suit. This is a part of their P.H.S. duty, a function of their employment. Opponents, on the other hand, must earn their livelihood otherwise. They can ill afford to remain at a trial longer than a few days at the most.

In my own case, as a practicing physician, whenever I gave testimony, my obligations to my patients required my prompt return to work. In Evansville, Chicago and St. Louis, after my departure proponents brought in witnesses to

counter my testimony. Scientists representing opponents were not available to assist attorneys in refuting proponent claims and in cross-examinations.

6. In some of the U. S. suits, proponent newspapers may have exerted an influence on the judge. For instance, after the St. Louis county case had been decided against fluoridation by the lower court, the local newspapers* clamored for a reversal of the Circuit Court decision.

All these drawbacks respecting the plaintiff's case were discussed with the attorneys at the Four Courts meeting. I also alerted them to two publications expressly designed to counter valid criticism of fluoridation namely, the comprehensive Kettering Laboratory catalog of the world's medical literature on fluoride¹¹⁶ with annotations and comments to assist proponents in law suits and the University of Michigan's *Classification and Appraisal of Objections to Fluoridation*, designed to counter any and all objections to fluoridation.

Court procedures in Ireland differ from those in the U.S.A. There is no rebuttal testimony. Evidence to discredit a witness or his testimony must be admitted during cross-examination. Arguing with a witness is encouraged rather than forbidden.

Having just attended the Bern conference, I was acquainted with a number of outstanding scientists opposed to fluoridation. The attorneys reviewed with me the qualifications of those who might be asked to appear as witnesses. Unfortunately, several professors whom I suggested could not leave their university at the appointed time even for a few days. To others, funds for traveling expenses were not available.

Eventually, the following testified concerning their research: Dr. T. Anton Gordonoff, Professor of Toxicology and Pharmacology, Bern University; Prof. Andrea Benaghi

* St. Louis *Post Dispatch* 7/7/60 and St. Louis *Globe-Democrat* 7/7/60.

ano, one of Italy's most outstanding dentists, Director of the Eastman Dental Research Institute, University of Rome; Prof. Sergio Fiorentini, a leader of dental research at the same institute; Dr. Fauzi Rozeik, Assistant Professor, at the dental school of the University of Mainz, Germany; Prof. Douw Steyn, head of the Dept. of Pharmacology and Toxicology, University of Pretoria, South Africa; Dr. H. McDonald Sinclair, an outstanding nutritionist and Fellow of Magdalen College, Oxford University; Charles Curry, Senior Dental Surgeon, Middlefield Hospital, Knowle; Chas. Dillon, D.D.S., Inverness Shire, Scotland, a dentist who had resided in Fort William, a fluoride-contaminated area. For years he had been studying fluoride's effect on teeth.

The calibre of these scientists differed appreciably from that of the witnesses in most U.S.A. court hearings on fluoridation who are usually lay persons.

On May 5, 1963, I returned to Dublin to testify. I was met by my host, Mr. Richard Ryan, accompanied by Prof. Douw Steyn of South Africa, who had just completed his testimony. Mr. Ryan, a hard working, level-headed, clear-thinking gentleman in his early thirties, impressed me as being destined to go far in his career.

The traffic in Dublin like in other European cities was bound to frighten an American. There were numerous bicycles, horse-drawn vehicles and trucks. Cars were double parked on the narrow streets. No one seemed to be inhibited by speed limits — and all this happened on the "wrong side" of the street.

Nevertheless, during my entire visit, I didn't see a single wrecked car in Dublin. The heavy traffic is taking much less of a toll there than in Detroit.

The city itself is clean. Most of its streets are wide and attractive. Some of the buildings are a thousand or more years old, others are modern structures of recent vintage. There are no skyscrapers.

Only a few dwellings in the city have thatched roofs.

Old time thatchers are dying off like the skilled stone masons in our country. All other roofs are made of tile; none of wooden shingles. Most of the buildings are constructed of brick or stone. Many houses are built wall-to-wall covering entire blocks. In the outlying districts there are many villas with beautifully kept gardens. Fruit trees and ornamental shrubs were at the height of their bloom.

The city was in the midst of a bus strike. At the close of school hours, hundreds of children were begging for rides home. The Irish Army had come to the rescue with a fleet of trucks in which people were packed like sardines.

In the evening, Mr. Ryan, Prof. Steyn and two other attorneys visited Mr. Sean MacBride at his Roebuck Place home. From this venerable old landmark, Mr. MacBride's father had directed revolutionary activities against the British, which finally led to Irish independence and to his death. The elder MacBride was apprehended by the British and executed by a firing squad. His wife, Maude, carried on in her husband's stead, playing a major part in Ireland's liberation.

Mr. Sean MacBride is a brilliant attorney, one of Ireland's best. Astute and clearheaded, he has his feet on the ground. Like his parents, he is a lover of freedom and a friend of the people. By working late into night he had already acquired a remarkable knowledge of the subject. Later I learned that until a few years ago he had been Ireland's foreign minister. With a man of his caliber holding this position I felt that the affairs of the Irish Republic could not have been better served.

We discussed some of the questions liable to come up during tomorrow's testimony. Just previously in Detroit I had made a deposition regarding my experience with fluoridation in the suit of the New Haven Water Company versus the city of New Haven. The plaintiff's attorney had offered me some sound advice on how to conduct myself in court: Don't say any more than is asked of you; reply briefly, a

very difficult assignment at times.

I was prepared to confine my testimony largely to the numerous cases of poisoning from drinking fluoridated water, which I had personally encountered, one following another. Mr. MacBride considered this inadvisable. It would have invoked a lengthy and unpleasant cross-examination on each case. The defense would have tried to find loopholes in my presentation to fatigue and embarrass me whenever possible.

Mr. MacBride had warned me not to speak of my "office." "In Ireland offices are commercial institutions," he said. Physicians in Ireland practice medicine in clinics. I was reminded of the days shortly after I had immigrated into the United States in 1923. Some members of my noble profession shocked me by their greeting in the hospital cloak rooms: "How is business today?"

I anticipated that the same U.S.P.H.S. representatives from Washington, D. C., who had appeared in St. Louis, Chicago and Evansville, would cross-examine me in Dublin through the intermediary of different attorneys. I, therefore, presented to Mr. MacBride all questions which had been asked of me during former trials in cross-examination, as well as my proposed answers. As it turned out, my suspicions were justified. Indeed, several U.S.P.H.S. scientists, including Dr. N. C. Leone of Bethesda, Md., supported by British dental health officials, and Prof. Ingve Ericson of Stockholm, had already been at hand. They had been sitting behind the defense attorneys advising them constantly, handing them written suggestions on slips of paper regarding examination of plaintiff witnesses. This, I feared, was an ominous sign. No matter how thoroughly informed the plaintiff's attorneys were on the subject, they could not acquire enough knowledge to match the constant onslaught of statements, most of which originated with the P.H.S. in Washington, D. C., and the A.D.A. in Chicago. The plaintiff, on the other hand, had no funds avail-

able to hire a battery of scientists to be present throughout the hearing.

I later learned that the plaintiff's witnesses had done well.

Prof. T. Gordonoff had presented his research showing that fluoride interferes with the proper functioning of the thyroid gland, a subject on which he had carried out animal experiments and other careful studies. Prof. A. Benagiano had reported his extensive studies on fluoride's effect on the thyroid as well as on teeth, both on animals and on humans residing in a volcanic area north of Rome. The defense attorney attempted to eliminate his testimony by arguing that not he but his collaborators at his clinic had carried out the research. This impelled him to send for Prof. Sergio Fiorentini. The latter appeared a few days later and demonstrated that animals developed periodontal (gum) disease from fluoride at concentrations in drinking water slightly higher than 1 part per million.

In 1947, Prof. Fiorentini, a physician as well as a dentist, had examined 687 persons representing all ages in Campagnano, north of Rome, where water contains about 2.1 ppm fluoride. In age groups six to ten years, 44 per cent had normal gums; in the group between eleven to fifteen years, only 6.9 per cent; between ages sixteen to twenty, 4.9 per cent; after age forty-one, none of the persons examined had normal gums.

Another witness, Prof. Douw G. Steyn of the University of Pretoria, Union of South Africa, at his government's request had investigated in 1938 an unusual bone disease widely prevalent in the northwestern Cape Province. He demonstrated that it was due to fluoride in drinking water. He followed up his research with experimental work on sheep, cattle and rats.

At first he added a large dose, namely 0.7 gm of fluoride as calcium fluoride, to the daily basal ration of a group of heifers. The teeth of those which had received fluoride for

fifteen to eighteen months were soft, stained, almost worn down to the gums.

In 1942 he observed diarrhea, kidney and bladder stones in a group of 30 young sheep kept on artificially fluoridated water. Water which naturally contained fluoride proved to be less harmful.

From 1949 to 1950, he studied individuals in an endemic goitre area. The water was not deficient in iodine, the usual cause of goitre.²⁸⁰

To determine whether or not fluoride was responsible for goitre, Prof. Steyn administered fluoride and iodide to nine groups of twenty rats each. Groups A, B and C were given only fluoride, 0.3, 5 and 15 ppm, respectively, in water; groups D and E only iodide, 0.25 and 1 ppm. Groups F to I received water containing both iodide and fluoride, as indicated in Table 18. When the rats were sacrificed after twelve months, the thyroid gland had increased in size by one-third in 20 per cent of groups B, F and H which had received 5 ppm of fluoride. Rats in groups C, G and I which had received 15 ppm, the largest fluoride supplement, had thyroid glands two to three times their normal size.

Thus, Professor Steyn clearly confirmed what others, es-

Table 18
PROF. DOUW STEYN'S EXPERIMENTS IN NINE GROUPS OF RATS
Receiving Iodide and fluoride supplements
in their daily ration.

Group	Iodide PPM	Fluoride PPM
A	—	0.3
B	—	5
C	—	15
D	0.25	—
E	1	—
F	0.25	5
G	0.25	15
H	1	5
I	1	15

After 12 months: 20% in groups B, F and H showed an increase of the thyroid gland by 1/3. In Groups C, G and I the glands were 2 to 3 times normal size.

pecially Dr. Goldemberg of Argentina, had observed many years previously: fluoride interferes with the normal metabolism of iodide and the function of the thyroid gland.

Charles Curry, L.D.S., R.C.S., senior dental surgeon of Middlefield Hospital, Knowle, another witness for the plaintiff, had become interested in the fluoride problem when he was studying teeth of mongoloid babies. They were relatively free of tooth decay, yet from twenty-five to fifty per cent of their tooth's surfaces were mottled. Dr. Curry apparently had no knowledge of Dr. Rapaport's research that showed a higher incidence of mongoloid births in natural fluoride areas compared to areas with little or no fluoride in water.

The witness who had testified just before my arrival was Professor H. M. Sinclair, of Magdalen College, Oxford, England, an outstanding student of nutrition, especially in its relation to heart disease. His surveys on decay-free teeth of Eskimos and Canadian Indians showed that the presence or absence of fluoride in food or water had very little bearing on tooth decay. Sugars and sugar products, he assured the court, were mainly responsible for tooth decay. This phase of the caries problem, he urged, should be given foremost attention.

The next morning court started at 11:00 o'clock. In a large center hall of the beautiful "Four Courts" building adorned with heavy columns, small groups of bewigged and begowned attorneys were conferring with their clients, a picturesque sight. Even the clerks wore wigs and gowns.

Court procedure was most impressive. Instead of calling the judge "your honor," one addressed him as "your lordship" or "my lord." Anyone entering the courtroom or approaching the judge must bow his head like a vassal in the Middle Ages.

The defense had apparently not been told of my appearance. It seemed to come to them as a surprise.

Two extra stenographers, employees of the Ministry of

Health, were taking notes. This made it possible for the Irish Health Ministry to obtain a transcript of the day's hearing the same evening and prepare for cross-examination the following day while the witness was still on the stand. It also facilitated daily consultation by trans-Atlantic phone with the U. S. Public Health Service, which had a major stake in this hearing.

The defense attorney had successfully persuaded the court that scientific data from the literature could be quoted only if the witness could qualify as an expert on the particular phase of the subject on which he wanted to quote the literature. Thus I was permitted to quote data of others only if they pertained to fluoride poisoning.

The defense objected to admission of laboratory data on my patients on the grounds that I did not personally carry out the laboratory tests. This would have caused my whole testimony to collapse. However, Judge Kenny ruled in favor of admitting my laboratory findings.

Curiously enough, the same objection was made in Chicago where I testified in the court case of Schuringa et al. versus The City of Chicago. There, the Master in Chancery, Mr. Mayer Goldberg, allowed the objection to stand. Physicians rarely do their own laboratory work. Nevertheless, it is customarily admitted as evidence in court. Had I carried out my own fluoride determinations, the defense undoubtedly would have objected to their admission as evidence on the grounds—and rightly so—that I was not qualified by training to carry out such complicated laboratory procedures.

My testimony dealt largely with the poisoning which I had observed from drinking fluoridated water. At first I briefly reviewed some of the data on fluoride and its toxicity. Fortunately I had just completed my second monograph on "Acute Fluoride Intoxication" which subsequently appeared in *Acta Medica Scandinavica*, June, 1963, as a supplement.

I demonstrated that consumption of fluoride is impossible to control because unpredictable quantities are present in food, air and drugs. I showed that a person may become seriously poisoned by fluoride from minute amounts present in toothpaste and in tea even when drinking water is not fluoridated.

The fluoride analyses of soft tissues which I had carried out demonstrated that fluoride is stored not solely in bones and teeth but, under certain thus far unknown conditions, in soft tissues as well, especially in the aorta. I concluded with a detailed description of one of my cases of poisoning from fluoridated water. I explained why a single drug such as fluoride can produce a wide variety of symptoms: since fluoride is carried by the blood to all organs of the body, its action is not unlike that of other poisons taken into the system in minute amounts over long periods of time.

The cross-examination was remarkably similar to that which had taken place at previous court hearings in the U.S.A. Indeed, all questions which I had anticipated in advance were asked by the defense.

Everything went smoothly at the outset. In order to upset my equanimity, Mr. Butler, the defense attorney, inquired why as a respected physician I had taken no legal steps to counter the disparaging statements disseminated by Mr. Robert McNeil in his book on fluoridation.¹²⁸

I had not even read the item in question. However, had I read Mr. McNeil's book, it would not have disturbed me. I believed that my reputation in the community among my colleagues and my patients was so firmly established that unwarranted abuse would be of no consequence.

However, I told the court that I decided to take action when efforts to disparage and discredit me persisted. For Mr. Butler's information I produced a photocopy of the retraction which had appeared in the London *Times*, November 24, 1961, after I had successfully sued a British health official and the Royal Society for the Promotion of

Health for asserting that I opposed fluoridation for monetary gain. In this suit I merely asked for and obtained a public apology and retraction.

The defense attorney then quoted passages from the Report of the New Zealand Commission, the Ontario Fluoridation Investigating Committee and the AMA Report claiming that these fine bodies of scientists did not accept my data as valid.

"The New Zealand Committee," I explained, "consisted of three lay persons, a judge, a merchant and a biochemist. Not one of them was a scientist in a position to evaluate medical data on his own. They had to be briefed by advisers, the so-called "authorities" who were known promoters of fluoridation."

I presented the details of how the A.M.A. came to endorse fluoridation as described in Chapter XIII.

The heckling continued. The defense attorneys attempted to upset my testimony by reproaching me for permitting my wife to publish a newspaper as though the work of editing this informative paper had been a mortal crime. They then attempted to counter my reports of poisoning.

"Weren't Mrs. J's symptoms psychosomatic?" Mr. Butler queried. I pointed to the double blind test which incontrovertibly rules out the possibility that the disease is imaginary. Besides, I responded, doesn't clinical experience with more than 24,000 patients qualify me to recognize what is and what is not psychosomatic? Could such clear-cut organic findings as retinitis and objective neurological manifestations be due to psychosomatic causes? I asked.

"Did you inquire into her full history? What happened to her relatives, her father and mother, aunts and cousins?" Mr. Butler asked. This question previously posed at the A.M.A. Hearing in August, 1957, was an obvious attempt to prove to the court that I had neglected to thoroughly study all ramifications of this case and that my examination was superficial.

I had carefully delved into every phase of this patient's case, I replied, but had not considered it necessary to record irrelevant details.

"How could such a chronic disease as you described clear up within a few days?"

Of course it does not clear up altogether within such a brief time. The gastrointestinal symptoms and headaches disappear first, the arthritic changes in the spine and pelvic bones usually persist for several weeks. There is no definite pattern with respect to onset and improvement. No two persons react alike. In some, the disease clears up more promptly than in others.

"How did it happen that the *Journal of the American Medical Association*, the *Annals of Internal Medicine*, the *Journal of Gerontology*, and *Annals of Allergy* turned down your articles on fluoride poisoning?" Mr. Butler asked.

The enumeration of every single journal that had ever rejected an article of mine could have become the basis of exposing a genuine scandal had I been aware of it at the time: Mr. Butler's question betrayed the fact that P.H.S. officials, in their capacity as editorial consultants to the above-mentioned journals, must have advised the editors of each of these journals to turn down my articles, a fact of which I had suspected but had, heretofore, been unable to prove. In no other way could Mr. Butler have learned that these four particular journals and no others had rejected my articles. It is not customary for editors to discuss with anyone on the outside which articles they have turned down and which they have accepted for publication.

As though he himself had grasped the significance of his own question and was desirous to divert my attention, Mr. Butler suddenly burst forth:

"So you believe that there is a conspiracy behind the fluoridation movement?"

I had been asked this loaded question in a previous

court session. Had I said "Yes," the next day the Irish newspapers would have headlined: "U. S. Expert Believes That Fluoridation Is a Conspiracy But Fails To Prove It!"

This time, however, the question had real significance coming, as it did, immediately after the previous one. Actually, somehow, there must have been collective action to keep my articles out of American medical journals. How would the Attorney General of Ireland, otherwise, have learned the name of every medical journal which had rejected an article of mine?

I was reminded of the law suit, *Martin vs. Reynolds Metals Company*, wherein the attorneys of seven corporations which were not involved in the suit joined Fred Yerke of Portland, Reynolds' attorney, in his unsuccessful attempt to obtain a reversal of the judgment against Reynolds.*

It also recalled reports in metropolitan newspapers indicating price fixing by corporations which supply fluoride to communities for fluoridation (Table 19, page 336).

As though embarrassed by his own question and anxious to change the subject in a hurry Mr. Butler, the defense attorney, suddenly asked:

"Do you feel that you are being persecuted?"

I was about to break out in laughter when I quickly recalled the dignity of the court, the attorneys' wigs and gowns, the bowing before His Lordship. I caught myself in time and dismissed the question as ridiculous.

After my departure, Dr. Charles Dillon of Fort William, Scotland, presented his observations on mottled teeth from the fluoride contaminated area where he had practiced dentistry for many years and where he has carried out research on the adverse effect of airborne fluoride from Scottish factories upon tooth structures in both children and adults.

Subsequently the Government called an even longer list

* *The Oregonian* Portland, Ore. 10/15/57.

of expert witnesses, mainly from the U. S. A., including an Assistant Surgeon General and four other members of the P.H.S. They related at length the technical details of various experiments on rats or human beings, from which they drew the conclusion that fluoridation was effective against caries and completely harmless for everyone. Most defense witnesses admitted to active personal involvement in promoting fluoridation. They also made full use of the opportunity afforded to the defense to attack the evidence of the plaintiff's witnesses, and to belittle them as scientists. Only one (Prof. Fiorentini) was allowed to return to Court to rebut the charges made against him, which he did in spirited fashion. Not being conversant with the English language, he had the disadvantage of having to speak through an interpreter.

An important Government witness was Dr. John Fremelin, lecturer in physics at Birmingham University. He claimed that from 80 to 98 per cent of the fluoride in fluoridated water could be removed by running it through carbonized crushed bones. His conclusions were based upon experience with only 60 liters of water. This rather flimsy evidence was greatly overrated by the defense to support their contention that there would be no compulsion upon the plaintiff or her family to consume the added fluoride. They could buy crushed bones and a kettle.

In his concluding address Mr. MacBride, the leading counsel for the plaintiff, argued that rights guaranteed by the Constitution could not be less than private rights. A man who pollutes his neighbor's water or air is liable to be restrained from doing so. It is no answer for the wrongdoer to say "no wrong will be done to you if you fit and use a gadget at your own expense which will purify the water or air."

Neither the judge nor Counsel on either side had any training in medicine, dentistry, biology, chemistry, statistics or any of the technicalities with which the evidence was

concerned. Even the simplest scientific terms had to be spelled out and explained in simple language to the Court.

After about sixty days of near-interminable lecturing by the witnesses, amounting to some two million words of transcripts, with the Court literally surrounded by heaps of scientific and medical literature, the case came to an end. Mr. Justice Kenny rejected the plea that either the bodily integrity or the parental or personal rights of the plaintiff or her family had been in any way violated by the Act. He held that fluoridation involved no risk. In any case, he claimed, the plaintiff was not obliged to drink the water and could "by the expenditure of a few pounds, remove almost all the fluoride from the water."

The court left open the question, whether or not it is right to oblige a citizen, who is already paying taxes for drinking water, to go to the extra expense and trouble of buying bones to filter his water. Nor did the court anticipate that particles of the fluoride-containing bone precipitate could accidentally reach the drinking water and, when swallowed, cause sudden poisoning.

This important decision concerning the constitutional rights of the Irish citizen in the matter of his children's health depended entirely upon the expert evidence, and upon the ruling of one man, learned in the law but not in science. Yet, the decision hinged upon scientific, not legal, evidence. The judge decided that one set of experts was totally right, even to the point of proving a negative, i.e., that fluoridation carries no possibility of harm to any member of a large population and that the other set of experts, equally eminent and well-qualified, was totally mistaken and incorrect to the point of failing to establish even a possibility of harm. He failed to take into account that medicine is not an absolute science like mathematics or physics.

Indeed, Justice Kenny's decision contrasts with that of Sweden's Supreme Administrative Court. In December, 1961, it unanimously agreed that "the possibility cannot

be precluded that fluoridation will involve certain risks or disadvantages to the health of those who are constrained to make use of this water."

Decisions based upon the Court's understanding of the evidence and the Court's impression of the expert witnesses are in accord with the operation of the Law; they are not in accord with the operation of Science. Yet health officials and dentists quote this part of the Irish judgment, as they have quoted the "findings" of various Commissions and endorsing agencies, as though they constituted scientific authority. In science, however, facts are established by observation and experiment, not by advocacy or by voting.^{177a}

In contrast to court sessions on fluoridation in the United States, the plaintiff's case in Dublin was prepared by some of Ireland's most outstanding attorneys. Expert testimony for the plaintiff was presented by competent scientists, in contrast to what had happened in some of the U.S.A. law suits. Why then did Dublin's Mr. Justice Kenny rule against the plaintiff?

His decision can be explained on the following basis: The defendant's attorneys were continuously guided by two or three seasoned proponent scientists, who were familiar with every phase of the fluoridation campaign. Throughout the trial they were advising their attorneys how to rebut evidence submitted by the plaintiff. No such assistance was available to Mrs. Ryan's attorneys.

Furthermore, the Attorney General's legal staff with two stenographers constantly at work had access to the full daily transcript of the hearing. Thus, they could confer day by day with Washington, D. C., public health officials and their public relations advisers about whatever difficulties had arisen on this involved subject. U.S.P.H.S. public relations counsellors could make allegations based on the highly controversial literature at their disposal, weaknesses of which are difficult to pinpoint without extensive and painstaking studies. To obtain the documents necessary

for refuting such claims immediately was impossible for Mrs. Ryan's attorneys.

There was, however, a more significant reason for the collapse of the plaintiff's case. No matter how well qualified her witnesses and how learned their testimony, no matter how impressive their animal experiments, I was the only witness who could report about actual observations of humans poisoned from drinking artificially fluoridated water. On this pivotal point that water fluoridated at 1 ppm can and has poisoned people, the one and only fact which would unequivocally defeat fluoridation, I stood alone against the numerous voices assuring the court that fluoridated water was absolutely safe for humans and that my data were unreliable. Other physicians who have observed ill-effect from fluoridated water (see pp. 105, 207) were not available to testify.

During the course of the trial, damage was reported from fluoride naturally in water at concentrations only slightly higher than 1 ppm. That the same damage is bound to occur at 1 ppm in susceptible individuals is a foregone conclusion to every physician with clinical experience but is not readily understood by a lay person, not even by a learned judge.

It was impossible to bring to the surface during the trial the inner workings of this *Struggle With Titans*, namely, how valid research is being prevented from reaching the medical profession; how proponents create an unfavorable image of opponent scientists; how industry, using vast research grants, originated the fluoridation idea and influenced the thinking of the scientific community. Since not any of these facts were presented to Justice Kenny's court, his decision is understandable.

CHAPTER SEVENTEEN

NEW HORIZONS

In June, 1931, at Philadelphia, I presented research to the Association for the Study of Allergy, the forerunner of the present Academy of Allergy, in support of the current theory that fatal anaphylactic shock can occur in humans. At the time anaphylaxis was generally looked upon as an experimental curiosity confined to animals. A person can be so sensitive to an otherwise harmless agent, that he can die suddenly from it. Cases of anaphylactic shock and death, gathered from hospitals and from other physicians, were reported by me in several issues of the *A.M.A. Journal*, from 1933 to 1935. This disease occurred following injections of pollen,²⁵⁷ serums and from eating certain food substances.²⁵⁸ I pinpointed for the first time cases of human anaphylactic shock from ether and from a novocain (local anesthetic) injection.²⁵⁸

When I linked this condition, now called "crib deaths," with—of all things—the thymus gland, a fierce debate developed among my allergist friends.

This gland in the neck behind the breast bone had been subject to so much controversy that no one dared mention the gland lest he be ridiculed. In studying autopsies of children who died suddenly without apparent cause at various hospitals, I observed an enlarged thymus gland. There was a simultaneous enlargement of other lymphoid glands which belong to the same system as the thymus. In nearly all patients the adrenal glands were unusually small, in some they were paper thin.

On the basis of the facts gleaned from my clinical studies, I propounded a theory: Human anaphylaxis is linked with a lack of adrenal substance which in turn leads to enlargement of the thymus gland and of other lymphoid tissue. The autopsy findings of anaphylaxis differ greatly from asthma. Nevertheless, the anaphylactic state represents the earliest indication of an asthmatic condition, during which the child has not yet acquired the necessary protective antibodies to enable him to cope with, and eliminate, the harmful agents to which he so violently reacts.

Now, more than thirty years later, this theory is being resurrected. We now know that insufficient production of cortisone by the crippled adrenal gland leads to enlargement of the thymus and of other lymphoid glands. It is also associated with a heightened susceptibility to severe reactions.

The reticence of my colleagues at that meeting to accept and follow up the data which I then presented, based on careful autopsy studies and clinical observations, gave me an insight regarding the medical profession's reluctance to accept new ideas.

However, the opposition then encountered cannot be compared with the abuse and disparagement to which I have been subjected because of my research on fluoride, not only from lay persons with no knowledge of medicine, but from members of the dental and medical profession as well.

In the early days of allergy, only a few would believe that an otherwise harmless, non-protein substance such as an aspirin tablet, could be responsible for death. Similarly, today some of the country's most outstanding scientists are reluctant to believe that fluoride can be harmful in small amounts. They cannot conceive that "The Experts" upon whom they rely might be in error.

Had the officials of the American Dental Association and the P.H.S. known the full story about fluoride and its ef-

fect on humans at the time that Dr. Cox originated the fluoridation idea, they would not have initiated this unending campaign. Now that they have committed themselves, it is difficult for them to retreat.

Who is winning the "Struggle with Titans?" How will it end? Will it be decided next year, in ten years, or in 100 years?

Today many still accept the unproven promotional dictum widely disseminated by Dr. F. J. Stare that fluoride is a nutrient essential for health. Parents of young children are grasping for what they assume to be an easy panacea: 65 per cent reduction of tooth decay from drinking fluoridated water. The P.H.S. has assured the public that there cannot be any harm unless one daily drinks bathtubful of fluoridated water.

Constant repetition of the standard phrase "there has not been a single proven case of harm since controlled fluoridation started in 1945"* has had a profound impact upon the American public.

In Detroit, Judge George Bowles failed to examine the evidence on both sides on the premise that the safety of fluoridation has been established.** Before the case was assigned to his court he had publicly advocated*** fluoridation on the basis of one-sided information obtained from the University of Michigan.

A Kalamazoo physician who has promoted fluoridation in Michigan and in the U.S.A. has received the Wayne State University's "Distinguished Service Award" for his "concern about fluoridation." Curiously his sole research on the subject sponsored by a drug company actually indicated that young children drink very little water. Therefore, they

* *Post and Times Star*, Cincinnati, Ohio, 12/25/64.

** *Detroit News* 7/24/63.

*** Governor's Study Comm. on Prepaid Hospital and Medical Care Plans, July, 1962, Wayne County Circuit Judge George E. Bowles, Chairman.

do not receive enough fluoride through drinking water to warrant fluoridation.

Mr. Justice Kenny, in Ireland, decided that fluoridation does not interfere with the parents' constitutional right to make decisions on such personal, individual matters as their own children's health.

In the U.S.A., fluoridation has been instituted in many large cities. In little Ireland, fluoridation is now compulsory throughout the country. In several of Holland's largest cities, fluoride is being added to water supplies. The outcome of the battles in Great Britain, New Zealand, Switzerland and Australia hangs in the balance. Italy, France, West Germany,* Denmark, Norway and Sweden are thus far holding the fort.

On the *political* front, in the *Struggle with Titans*, the battle lines are yielding to the unrelenting waves of promotional releases. Not so on the *scientific* front:

Dr. Armstrong has reversed his early claim that sound teeth contain more fluoride than decayed teeth.^{114b}

Endemic dental fluorosis has been recorded in Israel from drinking water naturally containing as little as 0.35 to 0.95 ppm fluoride. The authors of this survey, K. A. Rosenzweig, D.M.D., and I. Abkewitz, D.M.D.,²⁵⁹ concluded that the widespread mottling caused by the fluoride was too high a price to pay for the slight reduction in tooth decay in that area. In Bindapur, India, where fluoride in water naturally ranges from 0.5 to 2.18 ppm, Dr. D. Anand and co-workers²⁴⁵ reported a substantial incidence of dental decay associated with mottled teeth. This contradicts the widespread belief that mottled teeth do not decay.

Prof. Singh's research is now appearing in U. S. medical journals. My monograph, *Fluoride in Clinical Medicine*,⁸⁴ has received a favorable reception in Europe. Prof. Fradá is exploring fluoride's relationship to hardening of arteries.

* In West Germany only half of one city (Kassel) is fluoridated.

In the *British Journal of Radiology*¹¹¹ of July, 1963, page 497, Drs. Kumar and Kemp Harper reported new evidence of calcified arteries in young persons with skeletal fluorosis from relatively low concentrations — less than 6ppm of sodium fluoride or 2.7 ppm of fluoride — in water naturally.

Through the courtesy of two Iowa physicians I have had an opportunity to study the organs of a newborn baby who expired a few hours after birth with extensive calcium deposits in the aorta, heart and other organs.²⁶⁰ Fluoride levels in the aorta were as high as 59.32 ppm. This finding casts doubt upon the theory propagated eagerly by some, that nature protects the unborn child from fluoride damage by preventing excess fluoride from entering its system.

In a Czechoslovakian medical journal, Dr. G. Kausal²⁶¹ has observed hemorrhages in the duodenum (upper bowel) of five newborn infants whose mothers had been working in an industry where they were exposed to air contaminated by fluoride. The ulcers were of the kind experimentally produced by large doses of fluoride.

Dr. F. J. Stare's persistent recommendation of fluoride for osteoporosis is backfiring. At least one case of permanent blindness (macular retinitis) of one eye has been attributed to this treatment by Drs. Geall and Beilin²⁶² of London, England. I have encountered the early stage of this eye disease in three patients poisoned by fluoridated water. Others²⁶³ have noted spinal arthritis and stomach disorders due to this treatment as well as increased joint pains.¹⁹⁰

J. R. Marier and associates, scientists of the Canadian National Research Council, in the *AMA's Archives of Environmental Health*²⁶⁴ and Dyson Rose and Marier in *Chemistry in Canada*^{264a} have further pinpointed factors which are inconsonant with fluoridation. A U. S. medical journal, *Annals of Internal Medicine*, has reported cases of

skeletal fluorosis in Arabia from fluoride which naturally occurs in drinking water at the unusually low range of 0.8 to 3.45 ppm.⁹⁸

Most significantly, Dr. Muhler himself, a staunch promoter of fluoridation, has shown that fluoride accumulates in soft tissues where it can produce calcium deposits under certain conditions.¹⁰⁰

More telling than the most elaborate statistics and animal experiments is a statement by Dr. A. L. Russell of the U. S. National Institute of Dental Research, Bethesda, Md., made at the meeting of the American Association for the Advancement of Science, Montreal, December 26, 1964. He referred to the deplorable condition of teeth in Baltimore which he considers "reasonably representative of the U.S.A. as a whole." The decay rate among white people in Baltimore is about 60 per cent worse than that of Ethiopians who, he stated, have "the fewest decayed molars and other teeth (of any group reported)." After twelve years of fluoridation in Baltimore, one would expect that the proverbial 60 to 65 per cent improvement in the decay rate should somehow be perceptible.*

During the past two years I have encountered additional cases of chronic poisoning from fluoridated water. Some patients have been hospitalized for thorough investigation whereas in others I had no opportunity to carry out extensive studies. In all cases the disease has been cured without treatment other than the elimination of fluoridated water. Since I am not practicing in a fluoridated city it is difficult for me to assess the incidence of the disease. It is likely to vary from one city to another because water supplies vary in their content of calcium, phosphorus and other protective minerals. The appalling lack of knowledge concerning the manifestations of this disease among physicians and the unrelenting propaganda claiming fluoridation is absolutely safe account for the fact that fluoride poisoning continues

* Tampa Times Dec. 26, 1964.

to be generally unrecognized throughout the country.

From the foregoing it appears that the pieces of the fluoridation puzzle are falling into place. They reveal a gigantic picture of the fluoridation struggle. The following are some of the pieces:

Scientists at U. S. universities whose research has established evidence unfavorable to fluoridation issue statements that their work is being misinterpreted or that they, themselves, are of an opinion diametrically opposite to the facts which their research disclosed (pp. 122, 304).

A scientist at a New York state institution, Dr. J. A. Forst, was obliged through intervention of a P.H.S. official, Dr. D. B. A., to declare his own research invalid, as disclosed at a New York State Legislative Hearing in Albany on February 29, 1956.

Several important P.H.S. studies which turned out to be unfavorable to fluoridation were not published in official health journals (pp. 242, 243).

The P.H.S. has initiated many scientific studies on air contamination, yet fluoride, one of the most poisonous air contaminants, is rarely if ever mentioned.

Whereas millions are drinking fluoridated water, there is scarcely a hospital in the U. S. A. whose laboratories are equipped to perform fluoride analyses.

On several occasions, scientists who proved fluoridation harmful^{206, 206} were provided with research grants and P.H.S. advisers for the purpose of setting up new research designed expressly to arrive at conclusions opposite to their original findings (p. 237).

P.H.S. officials, acting as consultants, have advised editors of leading U. S. medical journals to refrain from publishing scientific findings of unquestionable validity and of utmost importance to the nation's health merely because they did not conform to fluoridation promotion (pp. 163, 322).

Free discussions, which are customary in medical socie-

ties regarding other new measures, have been repeatedly barred on the subject of fluoridation (pp. 24, 255).

Scientists who have carried out valid research unfavorable to fluoridation have been harassed to such an extent that they have decided to discontinue their research on fluoride (pp. 235, 242, 249).

An international conference on fluoride of outstanding scientists, underwritten by the Italian government to convene at the Dental School of the University of Rome, September, 1961, was abruptly cancelled within a few weeks before it was to take place (page 276).

After the same group of scientists had conferred in Bern, Switzerland, Oct. 21 to 23, 1962, publication of the transactions already in print containing research on fluoride otherwise difficult of access was suddenly abandoned by the original publisher (page 284).

When the Science Editor of a nationally circulated magazine was attempting to explore all aspects of the fluoridation question he was designated "an anachronism who should be removed from his editorial chair."*

According to the *Journal of the North Carolina Dental Society* of August, 1955, Vol. 38, page 144, dentists R. P. and D.H.E. of Greensboro, N. C., were temporarily suspended from membership in the society because they openly opposed fluoridation. According to the *Boston Daily Record* Sept. 28, 1961, Dr. Max Ginn was "dropped" from the Massachusetts Dental Society for the same reason.

Seven large corporations, through their attorneys, joined Reynolds Metals Company to obtain a reversal of a court decision against Reynolds. Fluoride from its smokestacks had contaminated the air and poisoned three humans (p. 119).

Vested commercial interests are sponsoring the British Dental Association's drive in favor of fluoridation. A publicity campaign to obtain fluoridation was announced in the Supplement to the *British Dental Journal* of September,

* John Lear, *Saturday Review* Jan. 2, 1965, page 91.

1963. Made possible "through the generosity of three firms of toothpaste manufacturers who will remain anonymous," "advertisements in the press and in magazines, circularization of letters and pamphlets to all local councilors and distribution of posters for display in waiting rooms, clinics, out-patient departments, factory notice boards, canteens and interviewing rooms in factories," will be utilized, according to the announcement.

Newspapers in five cities reported identical bids by two and more corporations in the sale of fluoride for addition to municipal water supplies (Table 19), thus raising the question of price fixing, a federal offense.

Table 19

NEWSPAPER REPORTS OF IDENTICAL BIDS

Town	Source of Information	Remarks
Wilmington, Delaware	Journal Every Evening 11/25/59	Of four bids, 2 identical: \$6.60 per 100 pounds of sodium silicofluoride
Chicago, Illinois	Daily Tribune 6/8/60	International Minerals and Chemical Corp. Skokie; —Davison Chemical Co., Baltimore; —Swift and Co., Chicago: \$54 per ton. Identical bids from Harshaw Chem Co.; Henry Sundheimer Co., New York; Amer. Agric. Chem. Co., New York. \$0687 per pound on 900 tons of sodium silicofluoride.
Cleveland, Ohio	Plain Dealer 7/18/60	Equal bids \$53.80 per ton to supply 800,000 lbs. of hydrofluosilicic acid by Commercial Chemicals and Davison Chemical Co.
Niagara Falls, New York	Niagara Falls Gazette 12/22/59	3 identical bids: \$46,800 for 600,000 lbs. of sodium silicofluoride by Blockson Chemical Co., Joliet, Ill.; Hydrite Chemical Co., Milwaukee, Wisc.; and McKesson Robbins, New York.
Milwaukee, Wisconsin	Chemical Week 3/23/57	

One of the country's highly reputed scientific institutions, the Kettering Laboratory, Cincinnati, published a "Selected Bibliography" on fluoridation for distribution to scien-

tists. Sponsored by nine corporations and supported by P.H.S. grants, all research unfavorable to fluoridation is omitted, including some of the most valuable scientific material on the subject.²⁶⁶ Thus a scientific institution of high repute has allowed itself to become something akin to a propaganda agency.

The following event illustrates the difficulties encountered by physicians in becoming aware of data unfavorable to fluoridation:

In the February, 1965, A.M.A. *Archives of Internal Medicine*, Dr. D. R. Taves, and collaborators, of Rochester, N. Y., reported substantial accumulation of fluoride in the blood of a 41 year old nurse from the use of fluoridated water in hemodialysis, a treatment for kidney disease.²⁶⁷ Hemodialysis is the process of clearing the blood of damaging metabolic waste products by withdrawing blood from the body and then returning it after its passage through an "artificial kidney." In this procedure, circulating blood passes through flowing water, separated from it by a semipermeable membrane.

In repeated treatments extending over eight months, the authors observed that fluoride entered from the water into the blood stream and settled in the bones instead of the toxic waste products leaving the blood. After the patient's death destructive changes in bones which were associated with an unusually high (5500 ppm) accumulation of fluoride were revealed at autopsy. The authors failed to realize that others, especially Dr. Amarjit Singh¹⁴⁷ of Patiala, India, had observed advanced crippling fluorosis in patients whose bones contained only 1500 ppm of fluoride. They determined that most of the fluoride stored in this woman's bones had accumulated prior to the treatment.

I wondered why the authors had failed to report significant clinical details in their presentation of this case, especially the patient's symptoms and autopsy data. Data on the extent to which fluoride had accumulated in organs other

than bones, especially in the diseased kidneys, would permit an evaluation of its possible damage to these organs. It also would indicate whether or not fluoride had contributed to, or caused, the woman's death.

When I asked one of the authors for further clinical details, to my surprise he referred me to another article dealing with the same case. Written by an entirely different team, Drs. L. H. Kretchmar, W. M. Greene, C. W. Waterhouse and W. L. Parry, it was published in 1963 in the *J.A.M.A.* Vol. 184, page 1030.²⁶⁸ My correspondent stated that he had forgotten to mention this article in his paper. He also enclosed another forgotten reference about which I had inquired, namely that of an article by Drs. J. R. Blayney, R. C. Bowers and M. Zimmerman.²⁶⁹ A number for this reference was shown in the text, but the reference was missing in the bibliography. This article showed that, in patients with kidney disease, excess accumulation of fluoride takes place in the iliac bone.

According to the *J.A.M.A.* article the patient had fourteen treatments with the artificial kidney. At first all went well and she improved. Later when each treatment was prolonged from 4 to 6 hours she developed headaches, confusion, nausea and, on one occasion, a convulsion. Not aware at the time of the effect of fluoridated water, the authors attributed these symptoms to the kidney disease. Intravenous medication brought relief for only 15 minute periods but the symptoms persisted for 24 hours after each treatment. Paradoxically, the patient's output of urine was diminished for two days after each treatment, a sign of further impairment of her kidney function.

The A.M.A.'s authors described "a bizarre neuromuscular irritability" with twitching of the right arm and occasional convulsions. During one of the convulsions, one hour after treatment, the patient expired. The authors had no explanation for this unusual phenomenon. I could not help but recall my cases of fluoride poisoning in which I

have frequently observed muscular fibrillation (twitching), especially in the case with tetaniform convulsions described on page 106. The authors warned that the otherwise well established method of hemodialysis should not be employed too vigorously as it might induce further deterioration of the disease which it was to alleviate.

Whereas convulsions occur occasionally in advanced kidney disease, a member of the team must have suspected that some other factor, perhaps a contaminant in the Rochester tap water, had poisoned the patient. An investigation followed in which top P.H.S. scientists were consulted, including Prof. Armstrong, of the University of Minnesota, whose services the P.H.S. had employed previously to counter the research of Dr. Alfred Taylor and that by Drs. Berry and Trillwood. Another consultant was Prof. H. C. Hodge of Rochester, a well-known exponent of fluoridation, some of whose research was discussed on page 293.

The P.H.S. must have found itself in another dilemma. If hemodialysis with fluoridated water as practiced on a large scale in the U.S.A. were to continue, this otherwise useful procedure would in all likelihood turn out to be disastrous to many people. On the other hand, if the case were to be properly presented to the medical profession, it might kill fluoridation. The P.H.S. scientists could not risk keeping the data gleaned from this case to themselves. They had to warn the medical profession against the use of fluoridated water in an artificial kidney. This was accomplished in a most inconspicuous way by the publication of a second article which did not refer to the original case report.

From the evidence presented here and in previous chapters there cannot be any question but what this case constitutes the second fatality from fluoride in water reported in the U. S. medical literature, the first one from *artificially* fluoridated water. How many others have already shared the nurse's fate no one will ever learn. Nor is it possible to foretell how many additional unforeseen dangers to human life

due to fluoride will eventually come to light.

More significantly, this case demonstrates how the medical profession is being deprived of straightforward information about poisoning from fluoridated water.

It should be stated emphatically that the authors of the two articles cannot be held responsible for concealing the truth. Nor should anyone blame the editor of the *A.M.A. Archives of Internal Medicine* who inadvertently failed to ask for complete clinical details before he accepted the article for publication. The finger of guilt points to those who insist, categorically, that there has never been the slightest harm from fluoridation; that cases of poisoning have not been "documented" or have not been "brought to our attention" and who, in scientific journals, portray those not in accord with their views in the following manner: "The capacity of the human mind to deceive itself knows no limits."

Again, the question arises, why have no other physicians in the U.S.A. reported damage to health from fluoridated water.

Two recent experiences provide the answer. They disclose an approach quite similar to that described previously in "eliminating" experimental research unfavorable to fluoridation:

At first the patient is visited by a representative of the U.S.P.H.S. or of the local dental society. The latter seeks to learn whatever he can that might be embarrassing to the patient or to his physician. The physician is then persuaded to make his record available to a special committee which, unbeknown to the patient or physician, is established for the purpose of "proving" that the diagnosis of fluoride poisoning is fallacious. The physician is subsequently obliged to declare his diagnosis unwarranted. Should he insist upon maintaining his position or communicate his experience to his colleagues, he will be subjected promptly to public abuse and embarrassment.

On March 24, 1965, two prominent fluoridation prom-

tters representing themselves as a newspaper editor and a member of "The Antigo Freedom from Fluoridation Committee" gained the confidence of Mrs. J. W. P. of W., Wisconsin, whose physician had recognized that she was poisoned by fluoridated water and advised her to eliminate it for cooking and drinking. Having convinced her that they were genuinely interested in assisting her in proving her case valid, she divulged her physician's name and granted them permission to contact him for the details. Subsequently the physician, Dr. . . . S, was visited by five fluoridation promoters. After their visit he had no choice but to remain silent. The following day, the profluoridation committee, "Antigo Citizens for Better Health," declared in the local *Antigo Daily Journal* while this so-called "legal and medical investigation" was "in the process" (sic) that the case of Mrs. P. was "a flagrant abuse of truth, in fact a hoax."

On March 31, 1965, Dr. T., a health department official, visited the home of E. F., age 51, another victim of the same disease, in Hamden, Conn. This patient had undergone extensive tests under my supervision in a Detroit hospital by means of which diseases other than fluoride poisoning were eliminated.

At a hearing before a Conn. Committee on Public Health and Safety, following the examination of the patient by a special committee in a New Haven hospital, the Connecticut State Health Commissioner, Dr. F. Foote, publicly attempted to downgrade my competence, that of the chemist in Passaic, N. J., who had made the fluoride determinations on this patient, and that of the dentist in charge of the research unit who had upheld the chemist's reputation. The New Jersey State Health Department had requested the chemist's dismissal from his position at his hospital at the behest of the Connecticut State Health Department.

A New Haven physician who had concurred with my diagnosis was invited to appear before the local medical so-

ciety where a program was set up for April 7th to feature the State Health Commissioner, Dr. Franklin Foote, and his special committee. In a letter to the program chairman, dated March 23, 1965, I requested equal time in order to present my evidence on this case at this meeting. This request was denied.

In January, 1965, several Detroit dentists told a newspaper editor, in whose paper facts unfavorable to fluoridation had been revealed, that \$27,000 was available for advertising to win the vote for fluoridation in Detroit the following November, and that some of this money could be used to buy space in his newspaper should he wish to cooperate.

May 13, 1965, every member of the Detroit District Dental Society was notified of a \$20.00 assessment for the campaign to win the local vote for fluoridation in Nov., 1965. Members failing to comply within 4 months were threatened with loss of membership in the local and national dental societies as stipulated in the portion of the by-laws which was attached.

To what does all this add up? On the basis of available information the question whether fluoridation is safe and effective is no longer at issue. It is evident that

- fluoridation was originally promoted by industry;
- a handful of outstanding scientists were given grants to carry out research in order to prove a predetermined thesis;
- these scientists, utilizing this research and their high standing in scientific groups, were able to attract officials in medical and dental organizations;
- the dental branch of the U. S. Public Health Service embraced the new "health measure" at a time when relatively little progress in preventive dentistry was on record compared with its sister branches in the medical field;

● new industries including some of the toothpaste and drug industries fell into line;

● the same scientists, now aided by the U.S.P.H.S., began a vigorous campaign among lay organizations with the backing of some of their colleagues whom they had, by now, convinced that fluoridation is safe; ● these men won the news media, especially medical news writers, for their cause and thus prevented data unfavorable to the project from reaching the profession and the public;

● supported by the P.H.S., by industry, by professional organizations, lay groups and trusting individual civic leaders, they created an unfavorable public image of all who disagreed, lay persons and scientists alike.

It may well be that the P.H.S. was not in on the ground floor when the fluoridation idea was initiated. However, having committed themselves prematurely to promotion of fluoridation, now that serious damage to health of citizens in many fluoridated cities has been established, they cannot retreat without jeopardizing their position and laying themselves open to prosecution.

As one of the participants at the Fourth Annual Conference⁶⁶ of State Dental Directors with the Public Health Service and the Children's Bureau, June 6-8, 1951, stated: "We have told the public it (fluoridation) works, so we can't go back on that."^{*}

The struggle against the modern day Titans will eventually end. With its termination will emerge a vast expansion of scientific knowledge. The suffering of a Merrilies, a Jones, a Dunn, and an Ayres^{**} will not have been in vain.

The mighty gods called Titans, who once ruled the world, have faded away. They exist only in memory. Yet their impact upon civilization—good and bad—is undeniable. The same fate awaits the Titans of today. Their con-

^{*} Page 35 of the *Minutes of the Fourth Annual Conference*.⁶⁶
^{**} Names of patients poisoned by fluoridated water.

tributions to our modern way of life will remain.

Evidence is already available that fluoride, one of the most reactive chemical agents, liable to be present in every human organism and in many body organs, provides the key to the explanation of several illnesses. Among them some forms of migraine, arthritis, colitis and gastric disorders rank prominently. These diseases are due to many different causes. Fluoride will be recognized as one of them.

Fluoride's effect on calcification of arteries and ligaments, conditions which we now attribute to "normal" aging will eventually be clarified. Research respecting fluoride's bearing on the thyroid gland, on the glucose (sugar) and on the calcium-phosphorus metabolism is bound to open up new frontiers in medicine.

I am completing the last lines of *A Struggle With Titans* at my farm retreat, about thirty miles north of Detroit. In this dream house of mine, nestled in the hills, I have personally set rock upon rock to build its solid walls. Through the huge glass partitions I glance at the waves of ripening wheat. I can see cows grazing on the hills sucking their calves. A flock of starlings pursue a hawk in its graceful flight. I hear the rustling of corn. The atmosphere, calm and serene, contrasts with the turmoil of a stormy council meeting, a radio debate, the penetrating barbs of a Stockholm professor of dentistry or of a former Kettering scientist now employed by an aluminum corporation.

I turn on the radio and hear the voice of WJR's Director of Fine Arts, Karl Haas. Listening to this brilliant music commentator and pianist affords me genuine satisfaction especially since, some thirty years ago, I rescued him from the Nazi gas chambers by bringing him to Detroit.

Today, his program featured the German poet Goethe. One of his poems, "Wanderer's Night Song," set to music by Franz Schubert, struck a familiar chord. It put into words the peaceful atmosphere surrounding me:

"Über allen Gipfeln is Ruh
In allen Gipfeln spürest Du
Kaum einen Hauch
Die Vögel Schlafen im Walde
Warte nur balde
Ruhest du auch.

Above all summits there
is peace,
Above all tree tops one
Senses scarcely a breath.
The birds are silent in
the woods;
Wait, oh wait—you, too,
will soon be at rest.

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GLOSSARY

- A.A.A.S.** American Association for the Advancement of Science.
- Acne** An affection of the skin with eruption of papules or pustules.
- Acute illness** Illness of short duration as contrasted to chronic illness.
- A.D.A.** American Dental Association.
- Adrenal gland** Gland of internal secretion located above the kidney.
- A.M.A.** American Medical Association.
- Amyloidosis** Replacement of tissue by a substance resembling starch.
- Anaphylaxis** A severe state of sensitivity leading to shock and death.
- Aorta** Great artery through which fresh blood is pumped from left ventricle of heart throughout the organism.
- Arteriosclerosis** Hardening of the arterial walls.
- Biopsy** Microscopic examination of tissue removed from the living organism.
- Calcification** Deposition of calcium salts.
- Calcium Fluoride** (CaF_2) a mineral containing 51.33% calcium and 48.67% fluorine.—Molecular weight 78.08 (calcium ion = 40.08, 2 fluoride ions = 38.00).
- Cataract** Opacity of the lens of the eye.
- Chalazion** Inflammatory distention of one of the Meibomian glands which are located at the margin of the eyelids.
- Cortisone** A steroid component of the adrenal cortex.
- D.D.S.** Doctor of Dental Surgery.
- D.M.D.** Doctor of Dental Medicine.
- Ectopic** Displaced outside abdominal wall.
- Emphysema** Overdistention of lungs.
- Enzyme** An organic compound, frequently a protein, which accelerates or produces a biochemical process by catalytic action.

- Erythema Multiforme** Skin eruption characterized by round, centrally indented lesions mainly on arms and legs.
- F.D.A.** Food and Drug Administration (Dept. of HEW).
- Fluorine** an element of the halogen group, atomic weight of 19. Exists as F_2 molecules.
- Fluorosis** Chronic fluoride poisoning.
- Gingival** Pertaining to the gums.
- Halogens** A nonmetallic element of the seventh group of the periodic system: chlorine, iodine, bromine or fluorine.
- Heifers** Young cows that have not had a calf.
- H.E.W.** U.S. Dept. of Health, Education, and Welfare.
- Hydrofluoric Acid** or **Hydrogen Fluoride** (HF) molecular weight, 20 (hydrogen ion = 1, fluoride ion = 19).
- Hydrofluorosis** Chronic fluoride poisoning from drinking water.
- Hyperparathyroidism** Disease due to excess activity of the parathyroid glands.
- Ingest** To take substance into the body by way of the alimentary canal.
- Intradermal injection** Injection between the two layers of the skin.
- Ion** An atom or group of atoms carrying an electric charge.
- I.A.M.A.** Journal of the American Medical Association.
- I.A.D.A.** Journal of the American Dental Association.
- Lymphoid glands** Structures about the size of a pea distributed throughout the body serving as a disposal plant for foreign substances.
- Metabolism** The sum of physical and chemical processes by which simpler compounds are converted into living, organized substances.
- Monograph** A treatise on a single subject.
- N.F.N.** National Fluoridation News.
- Neuromuscular** Pertaining to nerves and muscles.
- N.I.H.** National Institutes of Health, Bethesda, Md.
- Osteoporosis** Abnormal porosity or rarefaction of bone.
- Osteosclerosis** Excessive hardening or abnormal denseness of bone.
- Parathyroid gland** One of the four small glands on the lateral lobes of the thyroid which regulate the calcium-phosphorus metabolism.
- Parotid gland** A saliva producing gland located in both cheeks in front of the ears.

Periodontal disease Disease around a tooth.

Pharynx Area situated in back of palate and mouth, above the voice box.

P.H.S. Public Health Service.

Polydipsia Excessive thirst.

PPM (fluoride in water) Parts per million, i.e., 1 milligram (mg) per liter or 1 milligram (mg) in 1000 g of solid material. *Per cent (%)* 1% is equivalent to 10,000 ppm.

Retinitis Inflammation of the retina, often leading to degeneration of the inner eye and to blindness.

S. C. Senior Counsellor, a title earned by Irish attorneys after special training and experience.

Sodium Fluoride (NaF) contains 54.75% sodium and 45.25% fluorine. Molecular weight 42 (sodium ion = 23, fluoride ion = 19).

Sodium Fluosilicate (Na₂SiF₆) contains 24.46% sodium, 14.92% silicon, and 60.62% fluorine; molecular weight, 188.05 (2 sodium ions = 46, silicon = 28.05, 6 fluoride ions = 114).

Soft tissue organs Organs other than bones, teeth, hair and nails.

Syndrome A group of concurrent symptoms characterizing a disease.

Teleangiectasis An area of tissue composed of dilated capillary blood vessels or minute arteries.

Thymus A ductless gland in the chest cavity, just above the heart.

TV4 Tennessee Valley Authority.

Vertebra One of the bones which constitutes a segment of the spinal column.

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