Part II

no adequate research was available to prove beyond doubt that the overdose hazard no longer existed.* Indeed subsequent studies by Dr. W. S. Weisz in the *Journal for Dentistry for Children*, October, 1962,[119] question the efficacy and safety of a toothpaste containing fluoride.

By recommending simultaneous use of a fluoride toothpaste and water fluoridation, Dr. Muhler completely reversed the original condition for marketing this product.

Significantly, he himself was not too sure of the benefits of either one, when he stated at the American Dental Association convention in Los Angeles, October, 1960:

"We don't think that fluoride toothpaste alone or fluoride in drinking water or topically applied alone will prevent cavities. We say that a combination of these together with proper diet and toothbrushing will reduce the number of cavities."

Who can say for sure that the last two mentioned, proper diet and toothbrushing (using a neutral dentifrice without fluoride), will not do the job of reducing the number of cavities far more safely and efficiently?

A toothpaste without fluoride has proven, under careful testing, to produce equally as good results as a fluoride toothpaste.** Research by Dr. L. S. Fosdick of Chicago's Northwestern University has shown that regular dental care with a neutral, nonfluoride dentifrice will reduce tooth decay by 63 per cent.[120]

A conflict between the P.H.S. which has staked its reputation on fluoridation, and fluoride toothpaste manufacturers was apparent. Wide acceptance of fluoride toothpaste and fluoride-containing tablets might logically constitute a substitute for, and spell the end of, fluoridation. In order to offset the competition from fluoride toothpaste and tablets, were fluoridation exponents obliged to compromise?

Regardless of what transpired, the A.D.A. approved

* *Drug and Allied Industries* June 1958.
** Alameda, Cal. *Times Star* 3/8/63.

A STRUGGLE WITH TITANS

Crest. Dr. Muhler began to plug for both Crest and fluoridation. Procter and Gamble staged for the American Dental Association an expensive one-hour TV program over CBS.*

More companies were "looking goggle-eyed" than the seven named in *Chemical Week* referred to on page 114. The toothpaste manufacturers and drug companies could not have found a ready market for their fluoride products had it not been for the research designed to promote fluoridation of water supplies.

There is a parallel between the promotion of Crest, Procter and Gamble's stannous fluoride toothpaste, and that of Adeflor, the Upjohn (Kalamazoo, Mich.) Company's fluoride-containing vitamin drops recommended for decay prevention.

Upjohn provided research grants to Dr. F. J. Margolis,[121] a Kalamazoo, Mich., pediatrician and associates to determine the daily water consumption of young children in widely separated areas of the U.S.A. These scientists found that children consume, on the average, less than one pint of water per day, some as little as two ounces. This observation was recently confirmed by Canadian health officials, Dr. G. H. Bonham and co-workers, who surveyed drinking water patterns in young children in Prince George, B.C.[122]

These surveys irrevocably prove that children do not receive the recommended dose of fluoride through drinking water upon which the fluoridation hypothesis rests. The one part per million concentration was established by the National Institute of Dental Research[96] on the premise that the daily water intake in children averages about 4 glasses providing 1 mg of fluoride ion per day.

Recognition by the profession that children receive far less than this recommended amount of fluoride through drinking water would deal a vital blow to fluoridation. On

* *New York Times* 8/22/61.

ILLUSTRATIONS

21. BIRTH DEFECTS FROM FLUORIDE

X-rays of rats whose mothers were fed large doses of sodium fluoride during pregnancy. Birth defects such as the absence of forepaws in the second animal have been recorded by Dr. Charnot of Rabat, Morocco, a pioneer in fluoride research. The spinal curvature in the two lower animals and the elongated, curved upper (incisor) teeth are characteristic of fluorosis in rats. Animal on top is normal control.

24. SKELETAL FLUOROSIS

X-ray of knee joint in fluorosis from drinking water. Dark areas (thickened bone) alternating with light ones (osteoporosis or bone softening). Courtesy, Dr. J. F. Raffaele, Buenos Aires, Argentina.

25. SKELETAL FLUOROSIS

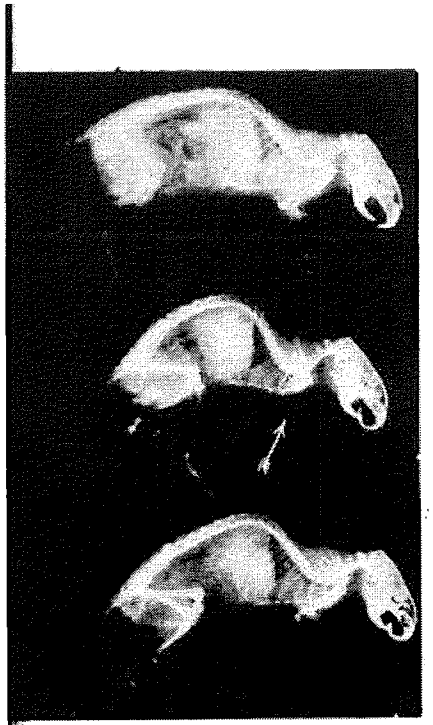
Pelvic bones showing irregular outline of the bony surface (arrow). The dark areas in the bone represent excessive hardening. The "feather-like" shadows outside of bone surface represent calcified ligaments. Courtesy, Dr. Christian de Sepibus, Sion, Switzerland.

26. SKELETAL FLUOROSIS

X-ray of portion of breast bone (sternum) of Linsman-McMurray case, showing thickening of bone (2) compared with normal bone (1). Courtesy, Dr. Joseph Linsman, Beverly Hills, Calif.

29a, 29b. DAMAGE IN RHEINFELDEN

Dying Beech and Chestnut trees due to fluoride from nearby factory. Note: Regeneration of leaves but absence of sprouts. Courtesy, Dr. L Gisiger, Bern, Switzerland.



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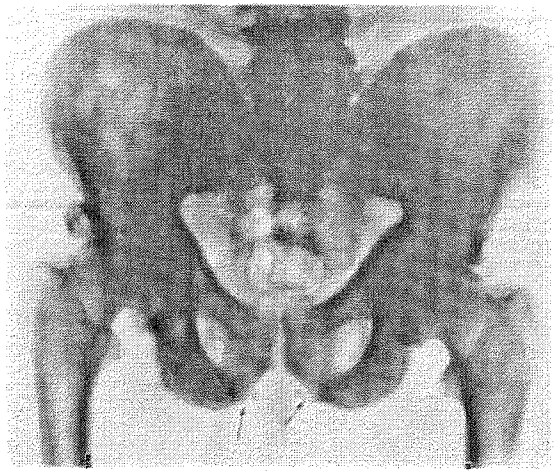
29b

29a



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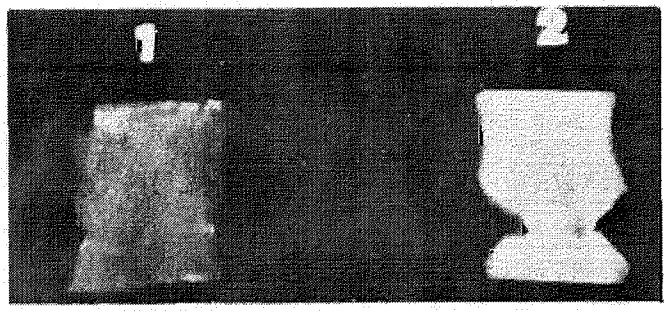

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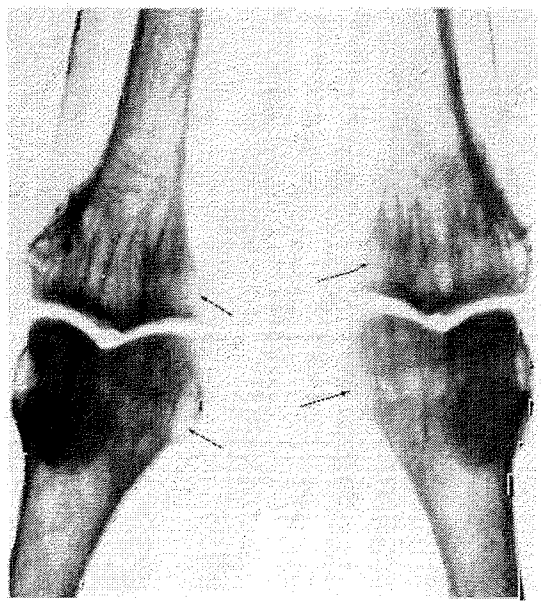

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the other hand, the P.H.S. realized that it would be too risky to administer 1 mg of fluoride in Adeflor drops in addition to the daily 1 mg or more already being consumed by some from drinking water.

On Nov. 14, 1962, the P.H.S. issued a public warning in Ann Arbor through Dr. Philip Jay. Reporting his Michigan Annual Pharmacy lecture at Ann Arbor, *Drug News Weekly*, Nov. 14, 1963, quoted him under the headline, "Unsupervised Use of Fluoride Items Held Hazardous," as follows: "In areas already supplied with fluoridated water use of added supplements is not only unnecessary but definitely contraindicated."

In August, 1963, the *A.M.A. News* advised caution and in September, the Newton, Mass., health director, Dr. H.M. Greenleaf, likewise warned against use of fluoride supplements where water is fluoridated.* Such advice against use of fluoride pills was bound to hamper the sale of Upjohn's product just as had the original regulations regarding fluoride toothpaste.

A pharmaceutical company cannot afford to antagonize the powerful P.H.S. and its Food and Drug Administration. Upjohn's colored film** promoting fluoridation of water supplies with Dr. F. J. Stare acting as master of ceremonies parallels Procter and Gamble's $250,000 one-hour long TV show celebrating the A.D.A.'s National Children's Dental Health Week featuring Henry Fonda.*** Both companies are marketing a product competitive to fluoridation. Both presentations would appear to have been a goodwill gesture to mollify the P.H.S.

In the Upjohn film this appeasement was done rather awkwardly:

* Newton, Mass., *News-Tribune* 9/27/63.

** This film was presented by Chester Tossy, D. D. S., of the Mich. State Health Dept. Oct. 7, 1963, at the hearing before the Mich. State House of Representatives Committee on Fluoridation at Cadillac Square Bldg., Detroit, Mich.

*** *New York Times* 8/22/61.

Obviously children are not receiving through water their quota of fluoride claimed to produce sound teeth. Yet the film extols the "beautiful teeth" of children who have been drinking Kalamazoo's fluoridated water for many years.

One must conclude: The sound teeth in Kalamazoo are the result of much less fluoride than that considered "optimal" (most desirable) by the P.H.S. or some factor other than fluoride–perhaps improved dental hygiene and a campaign to limit intake of sugar and sugar products.

As awkward as Dr. Margolis' explanation of the cause of Kalamazoo's "beautiful" teeth is the P.H.S. warning against Adeflor and other fluoride-containing products:

Dr. Greenleaf emphasized in Newton, Mass., on Sept. 27, 1963: "Although there is a wide margin of safety, those residents of Newton who have been taking fluoride pills or drops should now discontinue their use concurrently with the start of its [sic] delivery in the water."

How can there be a "wide margin of safety" if 1 mg of fluoride in water is desirable and an additional 1 mg in pills or drops is hazardous enough to require a special warning by health officials?

Besides drug, toothpaste and chemical interests, other industrial groups had reason to be "goggle-eyed" in contemplation of fluoridation.

P.H.S. *Publication 62*[123] named fourteen corporations as suppliers of fluoride feeders for communities throughout the United States. The cost for such equipment and its potential installation in Detroit alone was estimated by Water Board Manager, G. J. Remus, at $500,000.* Detroit is only one of numerous large U.S.A. cities. Installation and future maintenance throughout the country is bound to involve sizeable sums of money.

The sugar industry is likely to profit more by fluoridation than any other industrial group. Their organization, The Sugar Research Foundation, Inc., consisting of about 130

* G. J. Remus to Detroit Common Council 6/11/62.

corporations producing and processing sugar and sugar products had long been interested in finding methods of preventing tooth decay without curtailing sales of their products.

The Foundation's 1950 seventh annual report[81] expressed its aim in dental research as follows: "To discover effective means of controlling tooth decay by methods other than restricting carbohydrate (sugar) intake."

This goal of preventing tooth decay without decreasing sugar consumption warranted the expenditure of large research grants to universities. Mothers who are convinced that fluoride renders teeth resistant to decay, will not limit their children's consumption of sweets. Indeed, two of the institutions most vociferous in fluoridation promotion, the Dental Schools of Harvard and the University of Rochester, have been recipients of the Foundation's grants.

It is difficult to establish why the Western Electric Company issues a pamphlet promoting fluoridation;[124] why the Carrier Corporation in Syracuse comes out publicly for fluoridation, but refuses to present the other side.* Doubtless they are motivated by public spirit and concern for the nation's welfare. Members of their medical departments perhaps have not familiarized themselves adequately with the facts, particularly the many reports of fluoride's ill effects. Nor do they realize that most, if not all money available to U. S. scientific institutions for fluoride research flows from organizations interested in promoting fluoride. Financial support is rarely, if ever, forthcoming to U. S. scientists working independently of industry and government.**

* W. T. Lane, Vice-Pres., Carrier Corp., Syracuse, N. Y., to Dr. G. L. W. 8/15/60.

** According to the Pittsburgh *Post Gazette*, Nov. 21, 1963, Dr. Charles V. Kidd, Associate Director for Training at N.I.H., bemoans the fact that research grants go to universities with strings attached and, therefore, "universities cannot maintain their freedom."

Interestingly, the corporations which originally sponsored fluoridation have remained in the background in recent years. As early as January, 1950, Alcoa had advertised fluoride for addition to water supplies in the *Journal of the American Water Works Association*, Vol. 42, before adequate studies were available claiming to prove either its efficacy or safety. Once the P.H.S. began to promote fluoridation they discontinued their advertisements. On May 22, 1957, Alcoa's Chemical Sales Manager H. P. Bonebrake stated in a letter to C. A. Barden of Oberlin, Ohio, that they were not promoting fluoride for water fluoridation nor selling it "*directly* to any municipality."

The Sugar Research Foundation, Inc., withdrew its support after providing a total of $57,000 to biochemist J. H. Shaw, another leader in fluoride promotion, at Harvard's School of Dental Medicine. Dr. Shaw[125] had shown that all sugars induce decay. "We should cut down on sugar consumption, particularly candy," he stated to *Time's* reporter on January 13, 1958.

Corporations no longer need to promote fluoridation. The U. S. Public Health Service and the American Dental Association are now carrying the ball:

Officials of the A.D.A. and P.H.S. were the first to become convinced by research carried out at the Kettering Laboratory, Mellon Institute, Universities of Rochester, N.Y., and Minnesota, that fluoridation was a safe and effective tooth decay preventive.

These two organizations are the true giants among the Titans. They represent knowledge, power, organization, financial strength, political know-how and, what counts most, authority. Their officials, especially their public relations counsellors, have become The Experts.

The U.S.P.H.S. is a branch of the Department of Health, Education, and Welfare. The powerful Food and Drug Administration and the National Institutes of Health at Bethesda, Md., are two of its divisions.

Table 7

U.S.P.H.S. GRANTS TO COUNTRIES WHERE FLUORIDATION IS BEING PROMOTED IN DOLLARS

	1958*	1960**	1963***
CANADA‡	8,640	810,621	1,237,365
DENMARK	27,297	101,067	439,704
EIRE	19,078	62,250	78,730
NETHERLANDS	56,945	175,436	289,320
NORWAY	14,875	129,286	258,528
SWEDEN	87,600	507,570	1,509,011
SWITZERLAND	5,259	44,288	892,606
UNITED KINGDOM	232,035	900,048	2,751,326

‡According to the *Globe and Mail*, Toronto, April 1, 1965, the total in research grants awarded to Canada in 1963 by U.S. National Institutes of Health was $2,300,000.

*Public Health Service Grants and Fellowships, U.S. Dept. of H.E.W., P.H.S. Publ. No. 621 (1958).

**Publ. Health Service Grants and Awards, P.H.S. Publication No. 777, Part I (1960).

***Publ. Health Service Grants and Awards, P.H.S Publication No. 1079, Part I (1963).

The National Institute of Dental Research is the best equipped and staffed dental research center in the world. Through distribution of grants to dental schools in the U.S.A. and in many countries abroad (Table 7) its scientists are closely linked with scientific dentistry as well as health ministries throughout the world. Local, state and county health departments rely on the P.H.S. for research information and for monetary assistance.

The American Dental Association, intimately associated with the P.H.S., reaches into every town, large and small, in the United States. P.H.S. officials hold interlocking memberships on boards, committees and councils of the American Public Health Association and numerous other scientific organizations. P.H.S. representatives maintain close liaison with Congress, the Army, the Navy and the Air Force. Their link with industry is the National Research Council.

The American Medical Association has a permanent P.H.S. representative at its headquarters in Chicago. P.H.S. officers are members of all important scientific committees and councils of the mother organization in Chicago as well as county and state medical societies. They are represented

on editorial boards of every important medical and dental journal in the U.S.A. P.H.S. public relations officials are in constant contact with press, radio and television, their medical writers and commentators. Needless to say, P.H.S. officers and scientists can easily sway the thinking of leaders of scientific organizations and mold public opinion by virtue of the prestige of their position.

The yearly budget for fluoridation promotion is difficult to estimate. It is safe to say that it runs into millions. Two giants in Congress, J. A. Fogarty, Chairman of the House Subcommittee on Appropriations, Dept. of H.E.W., and Lister Hill, member of the Senate Appropriations Committee, were in continuous rapport with the P.H.S. They supported this organization in Congress regardless of whatever financial demands it made. For their yeoman service championing increased appropriations for dental research, these two congressional leaders received Lasker Awards in 1959* upon the recommendation of the Surgeon General.

The question arises, what made the A.D.A. and U.S.P.H.S. promote a measure which they themselves labelled a "calculated risk" at the beginning of the fluoridation drive?

The P.H.S. is traditionally a government agency for prevention of disease. Originally the P.H.S. was established to protect society from the spread of contagious diseases. In contrast to medicine, preventive dentistry has made relatively little progress in recent decades. For years it has been searching for measures to combat tooth decay, a serious health problem.

The P.H.S. was eager to adopt the fluoridation idea because at first glance it seemed to be the answer to their prayer. In their enthusiasm they initiated its promotion without first making adequate studies to learn about its possible harm.

* *Time*, 10/19/59.

Some claim that P.H.S., like every public agency with unlimited resources, wishes to enlarge its sphere of influence. Indeed in 1953 the P.H.S. Surgeon General, Leonard Scheele, addressing a conference of state and territorial health directors, called fluoridation but one example of "mass application methods for controlling non-infectious diseases." He predicted that "such a community-wide attack (by the P.H.S.) on 'far more serious diseases than dental decay probably will be forthcoming after laboratory tests have paved the way.' "*

Others blame Oscar Ewing, the former Alcoa attorney, who as Social Security Administrator gave fluoridation the green light only four years after the initiation of the ten to fifteen year experiments in Grand Rapids, Mich., and Newburgh, N. Y. At that time the permanent teeth of children born under fluoridation had not as yet erupted.

Regardless of what motives were at play, P.H.S. officials undoubtedly took their premature position on fluoridation because they were convinced that they were serving the nation's welfare. Once vigorous promotion of fluoridation had been initiated, it was difficult or well nigh impossible for them to reverse their position in spite of new research which established its hazard.

Whom else did the Titans recruit in implementing their new project? There are three kinds of promoters. Each has his own area of influence:

The scientist who has done original work on fluoride.

The professional, scientific and medical news writer who is impressed by the scientists' work.

The misinformed, who adopts views of others without making an independent study on his own.

1. The Scientist

As to the first group, the number of scientists endowed with research grants for fluoride research is legion. They

* Patterson, N.J., *Evening News* 11/6/53.

were chosen for this task because of their competence and their position of prestige in scientific organizations.

Only a few names can be mentioned here.

The late H. Trendley Dean, D.D.S., called the "Father of Fluoridation," had related the incidence and severity of mottled teeth to the natural fluoride content of drinking water. According to his classification of mottled enamel[120] the low-level category, "very mild," involves less than one-quarter of the tooth's surface. He disregarded the fact that even a minimal degree of this imperfection of the tooth's enamel constitutes a disease process, an external sign of internal distress.

Dr. Dean, through his membership on numerous boards and committees of scientific organizations, national and international, obtained single-handed at least a dozen endorsements, as noted in Table 8.

Table 8

ENDORSEMENTS DUE TO EFFORTS OF DR. H. T. DEAN

U. S. Public Health Service
The American Dental Association
The American Public Health Association
The Association of Public Health Dentists
The Association of State and Territorial Health Officers
The International Association for Dental Research
American Epidemiological Society
The National Research Council
Federation Dentaire Internationale
The American Association of Dental Editors
The American Medical Association
The Army and Navy Dental Schools

His final accomplishment was his appearance in Ireland where, according to the Dublin *Evening Herald*, April 13, 1960, he was honored by the Irish Dental Society. Through his persuasion, Ireland's Minister of Health introduced compulsory fluoridation throughout the country, the first and only country to do so.

Another promoter, who has been active in technical, chemical and engineering groups, is A. P. Black, Ph.D., Prof. of Chemistry at the University of Florida, at Gainesville. Dr. Black has been personally responsible for the introduction of fluoridation in many Florida communities, in some as early as 1949,* before any data from the fluoridation experiments were available.

His son and daughter-in-law, C. A. and L. V. Black were president and vice-president, respectively, of Black Laboratories, Inc. They supply plans, specifications and fluoridation equipment to cities.** While president of the American Waterworks Association, Dr. Black, in collaboration with H. T. Dean, D.D.S., obtained this organization's "permissive" resolution at its 1949 convention. In an article published in the World Health Organization's *Newsletter*,[127] Dr. Black promoted fluoridation throughout the world.

Dr. F. J. Stare of Boston, Mass., occupies a unique position in fluoridation promotion. His Department of Nutrition at the Harvard School of Public Health receives approximately $200,000 from the food industry and $400,000 from various government agencies per year.***

Through his prolific writings in medical journals, his association with a great school of medicine and through his membership on policy-making committees in scientific organizations, he wields a powerful influence among scientists, especially the medical profession. Through his column, syndicated in 40 newspapers, he molds the thinking of a large segment of the lay public.

When articles unfavorable to fluoridation appear in scientific journals or in lay magazines, Dr. Stare rarely fails to reply with the customary promotional claims. Under the claim of countering quackery in medicine, he appears before legislative bodies and scientific organizations where, in his enthusiasm, he has made many assertions unsupport-

* Testimony before the Florida State Board of Health, Jacksonville, Aug. 20, 1955.
** Tampa, Fla. *Sunday Times* 12/16/51.
*** *Medical Tribune* Nov. 15, 1963, Page 4.

ed by facts. In the *Journal* of the A.M.A. of Dec. 2, 1961, page 926, he called those whose position regarding fluoridation differs from his own "misinformed, stupid or dishonest." Few scientists, therefore, dare to challenge the veracity of Dr. Stare's claims.

"I don't pretend to be an expert on fluoride metabolism," Dr. Stare declared before a committee of the Ottawa Legislature, Feb. 27, 1964.*

Actually he has not published original research on fluoride for more than 25 years nor has he had clinical experience with patients through practicing medicine.

It would serve no useful purpose to enumerate the many additional scientists or to name the corporations under whose aegis their research was carried out.

However, one scientist is worthy of mention because he was one of those who did maintain his full independence in spite of endowment by industry and the P.H.S., namely Dr. Paul H. Phillips, Agricultural School, University of Wisconsin, Madison. Next to the Danish scientist, Roholm, Dr. Phillips has carried out some of the most valuable research on fluoride metabolism.

2. The News-Writer

The second group of promoters are professional people who have not personally been engaged in fluoride research: Medical news writers, physicians and dentists of stature. Too busy to study the subject themselves, they have taken a superficial glance at the research presented to them by exponents of fluoridation. They tend to rely upon conclusions, but fail to independently evaluate the intricate and involved data on their own.

Outstanding among these are two famous pediatricians, namely Cleveland's Dr. Benj. Spock and the late Dr. H. F.

* Stare, Dr. F. J. Before the Voluntary Committee on Health of the House of Commons and the Senate, Ottawa, Ontario, Canada, 2/27/64.

Helmholz of the Mayo Clinic; the late Dr. L. I. Dublin, an expert on insurance statistics; the renowned heart specialist, Dr. Paul Dudley White. Even some of the most discriminating scientists can be swayed by the constant flow of propaganda material, as shown by the position of Dr. Walter Alvarez, one of the country's best known medical writers and editor of a magazine for physicians. When my book on *Contact Dermatitis*[2] appeared in 1953, Dr. Alvarez spontaneously wrote to me that he considered my book "a classic for many years." When I sent him some of my data on poisoning from fluoride on which I had received favorable comments from leading scientists here and abroad he failed to give them any attention. Yet in his column he persistently promotes fluoridation while he often reiterates that he himself has made no study of the subject;* that he must trust "the authorities." At least once he has named Dr. F. J. Stare as his "authority."**

3. The Misinformed

The third group of promoters carries the ball because of emotions or for political and, in some instances, for business reasons.

A former Detroit councilman*** with no medical background wrote a promotional pamphlet to counter a carefully documented critical review by F. B. Exner, M.D., Seattle, Washington, whose fastidious study[127a] over many years has pinpointed numerous fallacies in the promotional scientific literature. This lay person's pamphlet has been widely distributed by the American Dental Association as though it had scientific value.

A Detroit clubwoman has appeared before many groups plugging for fluoridation. In a stereotype manner she re-

* Alvarez, Dr. Walter C.: Des Moines *Tribune* 12/19/64, page 4.
** St. Louis *Globe Democrat* 10/10/62.
*** Lincoln, James H.: Fluoridation of Water, Dec. 1956.

peats the names of organizations which have endorsed it. She cites former Presidents Eisenhower and Kennedy and Dr. Spock as endorsers, as though these men were authorities on the subject. In July, 1963, she received an award from the Detroit District Dental Society for her "civic-minded efforts."*

Often promoters are sincere public-spirited citizens who are convinced that the many scientists to whom they look for guidance cannot be in error. Mrs. Mary Lasker, for example, is the Vice-President of a national promotional group, the Committe to Protect Our Children's Teeth, Inc., and president of the Lasker Foundation.[128] In addition to Senator Lister Hill and Representative John Fogarty, at least one medical columnist has received the Lasker award in recognition of profluoridation efforts. He is Don Dunham, the writer of a series of promotional articles for the Cleveland *Press*, October, 1950.

A Detroit newspaper editor addressing the Detroit Women's City Club on January 18, 1963, implied that those who oppose fluoridation are "haters" responsible for inciting controversy in the community.

Everyone who has followed the fluoridation battles in U. S. communities is familiar with the local promoter, usually a dentist or a physician. He is a shrewd debater, immaculately dressed, able to call every politician by his first name, proficient in the art of lobbying. At public debates he carries with him a book written by two Ann Arbor health officials.[129] It catalogues all possible objections which opponents are likely to bring up and serves as his guide in refuting them.

It is virtually impossible for a president or secretary of a medical or dental society to speak out openly against fluoridation. Many express their opposition when they discuss the subject privately. Were they to do so openly, it might

* Detroit Dental *Bulletin* July, 1963.

constitute the end of their political career in professional societies as indicated to me in a letter by one of Michigan's most outstanding physicians* who was once selected as "Physician of the Year".

Another motive for promotion of fluoridation was presented to me by a representative of one of the country's leading labor unions who visited my office in order to examine some of my data on poisoning. He acknowledged to me that my position was sound. His organization, however, he confessed, cannot afford to jeopardize good relations with the U. S. Public Health Service. It, therefore, continues to promote fluoridation.

With this powerful array of groups and organizations led by the American Dental Association and the U. S. Public Health Service, supported by industry and by outstanding scientists in their employ, with constant coverage by the nation's leading newspapers and magazines and with persistent support by politicians striving for power, who are the people on the other side of this unending struggle?

Rarely do newspaper articles on fluoridation fail to designate opponents as falling into certain categories.

In one of the early versions, presented by Dr. G. J. Cox in the Michigan State *Dental Journal* of January, 1953,[130] there were five categories: "Uninformed"; "Misinformed"; "Those with Something Else to Sell, Either Ideas or Goods"; "Crackpots"; "Various Combinations of the Above." In recent years, new attributes have been designed and duly recorded in the *Journal of The American Dental Association*, Nov., 1962.[131] Opponents are linked with groups which have been stigmatized as anti-Negro, anti-semitic, anti-children, anti-everything. Sociologists in schools of social science have been given grants to write treatises in order to convince the public that opponents are unsavory people with a "sense of deprivation" and "alienation from society."[132] A Detroit newspaper in an editorial

* J. S. D., M. D., to Dr. G. L. W. 12/11/57.

July 26, 1963, referred to opponents as "A small but noisy band of obstructionists."

Actually, those with whom I have been fortunate enough to become acquainted are the cream of this nation's citizenry. They are self-sacrificing, intelligent, independent in their thinking, able to distinguish truth from fiction, willing to stand up and be counted. They are vitally interested in the prevention of tooth decay and in the health of their fellow citizens.

Pamela Haxton of Detroit, an eleven-year old asthmatic child, had an assignment in school on fluoridation. In the public library she found ample promotional material, but scant information unfavorable to fluoridation. Somehow she managed to obtain valid facts on the opponent aspect. Her report truly presented both sides. The whole class as well as the teacher and the principal became convinced that fluoridation was undesirable.

Mrs. Lucy Stevens is the wife of a former Ohio Appeals' Court judge. In 1955 his court decided in favor of fluoridation in the Cleveland case, Krause vs. City of Cleveland. Subsequently Judge Perry Stevens learned that much pertinent information had not been presented to the court.* His wife became an ardent worker disseminating the truth in her own city, the State of Ohio and throughout the nation. Mrs. Stevens spends much of her time and large portions of her income for this purpose.

Mrs. Patricia Rodney, a young matron with four children of Birmingham, Michigan, has thoroughly studied many phases of the medical and dental aspects of fluoridation. When she asked some of Metropolitan Detroit's most prominent physicians about their views on fluoridation, most of them acknowledged that they knew little about it. By furnishing them with scientific data which had heretofore not been accessible to them, those who were willing to

* Letter to Akron, Ohio, *Beacon Journal* 10/14/56.

take the time to examine it became readily convinced of the validity of the opponent case.

Miss A.M.A., dependent upon Philadelphia's Public Welfare, suffered ill effect from drinking fluoridated water. When she appealed to the City Health Commissioner for medical advice concerning her illness, he bluntly told her that fluoridation has been proven harmless and that her trouble must be caused by something other than fluoride. He did not investigate her case. The family is hard put to purchase the necessary food because a portion of her welfare allowance must be used to obtain fluoride-free water.

Mr. B.E.A. in Middleboro, Mass., up in his eighties, has been using a sizeable part of his meagre old age pension to counter the propaganda for fluoridation. Singlehandedly, he has been responsible for several rejections of fluoridation in his area.

Dr. and Mrs. L. of San Antonio, Texas, are opposing fluoridation. Mrs. L. and her daughter who formerly resided in unfluoridated New York City, habitually spent the winter months in Miami, Florida, where they had always enjoyed perfect health. In 1954, shortly after their arrival in Miami, both became ill with a serious stomach and bowel disorder. They had to cut their vacation short. Upon returning to New York City their illness promptly subsided. When in 1955 Mrs. L. and her daughter returned to Miami the disease recurred. It again cleared up promptly upon returning to New York.

In 1956, Mrs. L. was about to support the fluoridation drive in New York City, when she learned for the first time that even in minute amounts fluoride can cause the kind of stomach and bowel upsets which had plagued her in Miami. Upon further investigating, Dr. L. proved that the disease with which they had been afflicted was due to Miami's fluoridated water.

The 90-year old Miss M.M., Evanston, Illinois, suffered agony from drinking Evanston's fluoridated water. Upon

changing to distilled water she recovered completely from her serious illness without any other treatment. She is so concerned about helping her fellow men and imbued by public spirit that she has made arrangements with her minister and her physician to have a complete study made of every part of her body after her demise.

In a little town near Oslo, Norway, two ladies, Miss B.B. and Miss S.M., crippled with arthritis, are aware that fluoride contributes to calcification of tendons, ligaments and joints. They have been constantly searching for more and more facts about fluoridation with which to enlighten their fellow citizens. As the result they have been subjected to disparagement even by intimate friends.

The ranks of opponents include people from every walk of life, of every creed, color, economic and intellectual status. Outstanding Catholics, Jews, Negroes, Italians, Poles are among the leaders opposed to fluoridation, who have actively helped to spread the truth. They range from top scientists, waterworks engineers, past presidents of the A.M.A., deans of dental schools, Nobel prize winners to housewives. They have no organization, no grants from corporations. When fluoridation raises its head in a community, people band together to alert their fellow citizens to facts which they have accumulated. These groups are usually without guidance by scientists, and without funds. They lack political know-how. They are not familiar with current promotional methods nor with the art of public relations.

Little Pamela Haxton did such a good job convincing her classmates, her teacher and her school principal of the truth about fluoridation that one of Detroit's metropolitan papers was contacted to write a brief story about it. Pamela's exhibit was to go to Cobo Hall along with another presenting the proponent view. Her teacher suddenly became hesitant. Such a story would place her school in the limelight. It might even jeopardize her future advancement.

Therefore, Pamela's exhibit and the interview with the reporters were termed "too controversial." Plans to invite the President of Detroit City Council, Mr. Ed. Carey, to view the exhibit on fluoridation at the school did not materialize.

The principal chose the easier, more comfortable course; she acquiesced to group thinking. She backed away from the whole idea.

This story with variations has been the order of the day in many places in the U.S.A.

Little Pamela against the Titans.

CHAPTER EIGHT

IN QUEST OF KNOWLEDGE

In order to learn more about the effect of fluoridated water in humans, I reviewed research in three areas:

1. The effect of fluoride in controlled doses on experimental animals.
2. The available reports on fluoride poisoning in domestic animals, mostly cattle and sheep, feeding on fluoride-contaminated forage.
3. Data on acute and chronic fluoride poisoning in humans.

The classical book by Kaj Roholm[82] represents the guidepost regarding all research on fluoride. Dr. Roholm's research showed that fluoride is a systemic poison. Its action is not confined to bones and teeth. It is liable to settle in any organ of the body and to cause damage there. Like oxalic and citric acid it deprives the body of calcium, a vital element necessary to life. It interferes, at least in the test tube, with the activity of many enzymes. Some are adversely affected at a concentration as low as 1 part in 15 million parts of water. Enzymes are protein substances necessary to the functioning of vital organs.

1. Experimental Animals

Geneva, Switzerland, had been a center of fluoride research. Well known scientists such as Professors Askanazy and Ruitishauser had made extensive studies on this subject.

A young physician, Dr. F. deSenarclens, reported significant experimental work in 1941.[133] He administered fluoride in large doses to two goats daily for a period of 235 days. One received a total of 45 grams (1½ ounces) of sodium fluoride; the other, 72 grams of calcium fluoride, another fluoride salt. Both animals developed the bone disease called fluorosis. In other experiments on rabbits, rats and guinea pigs, he described in detail how fluoride disturbs the calcium and phosphorus levels in the blood and the alkaline phosphatase, an enzyme involved in bone growth. He presented a classical description of the microscopic appearance of the organs damaged by fluoride in the experimental animals. He observed goiter, chronic inflammation of the lining of the stomach and changes in the sex organs. One of the two goats had a spontaneous miscarriage during the course of the experiment.

It took me more than two years to locate Dr. deSenarclens and to obtain his dissertation. When I visited him in Geneva, he arranged a meeting with Dr. Ruitishauser, professor of pathology, and Dr. A. J. Held, a consultant on fluoride for Swiss industrial concerns. This conference furnished me with valuable information on the subject, especially with respect to my own cases.

During the conversation Prof. Ruitishauser stated that my data on poisoning would be of interest to the Swiss Academy of Medicine. I was thus afforded an opportunity to explain the manner in which my reputation before this august body had already been besmirched, and presentation of my data prevented. During a discussion on fluoridation Oct. 27, 1956, in Neuenburg, Switzerland, scientists had cited some of my work on fluoride poisoning from drinking water. Subsequently, a Dr. T. Hürny of Bern, one of Switzerland's most vigorous promoters of fluoridation, quoted extensively from the A.D.A. dossier, which alleged that I had claimed to have discovered "Loeffler's Syndrome."[134]

Prof. Loeffler, a Swiss clinician, had described an un-

usual type of allergic pneumonia similar to, but not identical with, the allergic lung disease which I had first reported in 1934 in the A.M.A.'s *J. of Diseases of Children.*[135] At no time did I so much as imply that I was the discoverer of Loeffler's Syndrome. This maneuver was evidently intended to prejudice against me not only Prof. Loeffler but also his many friends and admirers present at the meeting. Subsequently I had an opportunity to explain to Prof. Loeffler that Dr. Hürny's story was a fabrication.

This experience represents one of the methods employed in fluoridation promotion to discredit opponent scientists in the eyes of their colleagues.

From Dr. deSenarclens, I received his entire collection of microscopic sections of organs and X-rays of his experimental animals. With this extraordinary gift, I could study the disease first hand, at leisure, in my home.

At Bedford College, a venerable girls' school in the heart of London, I had another fruitful visit. In its stone basement was located the laboratory of Dr. Margaret Murray, a biochemist who has studied fluoride's effect for many years.

She and two of her collaborators, Drs. J. Y. Bowie and G. Darlow,[136] had observed in cats that sodium fluoride profoundly inhibits the production of stomach juice. They reasoned that this discovery might possibly be utilized in treating stomach ulcer[137] which is usually accompanied by excessive stomach acidity. No such cure for stomach ulcer, however, materialized. Doses of fluoride which depressed the flow of stomach juice induced small hemorrhages in the lining of the stomach and in the upper bowels of their animals. My discussion of these experiments with Dr. Murray and her collaborators furnished an explanation for the stomach and bowel disturbances which I had frequently encountered in my patients afflicted with fluorosis from drinking water.

At that time I was not aware of other fluoride research

under way in London. Two British scientists, Drs. Arnold Sorsby and Ronald Harding at the Royal Eye Hospital of London, subsequently reported that fluoride in large doses damages the eyes. They injected sodium fluoride into the veins of rabbits and produced degeneration of the retina, the internal lining of the eye vital to vision.

Their work published in 1960 in the *British Journal of Ophthalmology* brought out a feature that runs through the fluoride literature: The eye disease which they produced did not occur in every animal so treated.[138] Only 17 of their 115 rabbits developed the disease. A protective mechanism must be present in some animals, lacking in others.

Competent eye specialists had determined that some patients with fluorosis were afflicted with beginning retinitis, a degenerative disease of the retina. Interestingly, only three out of thirty patients exhibited this disease.

Scientists have also focused attention upon how kidneys are affected in chronic fluorosis. A Danish dentist, Dr. J. J. Pindborg of Copenhagen[139] and Dr. A. L. Ogilvie, a scientist at the University of California, College of Dentistry,[140] demonstrated that the kidneys can be the site of extensive damage from fluoride. When fluoride was withheld from Dr. Pindborg's animals, the kidneys began to improve. Dr. Ogilvie's studies revealed damage likewise to the parotid gland which produces saliva, and to the pancreas, the gland involved in the production of insulin.

These experiments demonstrated that many organs are liable to be adversely affected by fluoride. Since thus far clinicians engaged in medical practice have not been alerted to the possible harm from fluoridated water, a physician encountering such illnesses would not be likely to link them with fluoride.

Important fluoride research has issued from a Japanese medical school, Tokushima University, near the Aso volcanic district where the water contains fluoride from 6 to 13 ppm.[141] Here Prof. Tokio Takamori and his co-workers

studied individuals with mottled teeth and fluoride-induced bone disease. In children with advanced mottling they found reduction in growth and development, changes in the blood and delay in the eruption of teeth.[142] They linked mottled teeth with a trend to heart disease.[143]

In pursuance of these observations, Prof. Takamori's teams carried out numerous animal experiments: They observed fluoride damage to heart muscle[144] especially in animals deficient in Vitamins A and D. They showed that fluoride decreases the energy building glycogen in the muscles,[145] and that it adversely affects the function of kidneys in rabbits.[146]

Dr. Mitsugi Hirao, another member of the group, produced anemia and abnormal changes in the bone marrow by fluoride.[147] He recorded an increase in blood platelets, an indication of a disturbance in the clotting mechanism of blood. These experiments correlate with observations which I have made on three patients with fluorosis whose blood platelets ranged from 625,000 to 1,230,000. — 250,000 is considered normal.

All these experiments were executed with Japanese thoroughness and efficiency. Nevertheless, they are rarely mentioned in U. S. medical publications.

Another body of fluoride research originated in France. In 1931 the veterinarian Dr. H. Velu observed mottled enamel in a large population group due to fluoride in Morocco's phosphate mines. His work stimulated other French scientists, Drs. A. Charnot, René Truhaut, H. Cristiani, and Dean René Fabre of the Faculté de Pharmacie, University of Paris, to explore the many complexities of fluorosis. Prof. Truhaut was one of the early students of fluoride in food.[148] Dr. Charnot observed that sodium fluoride administered to rats tends to harden the bones whereas calcium fluoride softens them.[149] He also noted deformities in rats born of mothers who had been fed fluoride in large doses (Fig. 21).

During my visit with Dr. Velu, he presented me with an

historical document, namely his sole remaining original article about the identification of "darmous" (fluorosis) in North Africa with fluoride. Because of his many personal annotations and comments this treatise constitutes another museum piece in my collection of documents on fluoride.

In the U. S. A. the extensive experimentation by Dr. J. C. Muhler, University of Indiana, and by Dr. Paul H. Phillips of the University of Wisconsin has contributed materially to our understanding of the absorption and storage of fluoride in the body under various conditions. Recently Dr. Muhler has been studying the effect of fluoride deposition in soft tissue. This research may eventually turn out to be of major importance in our understanding of fluoride's action. It points to damage to many organs which, heretofore, had not been related to fluoride.[150]

The wide variety of organs liable to damage by fluoride is further documented by Drs. Wm. Machle[151] and later, by H. E. Stokinger[152] at the Kettering Laboratory, who exposed guinea pigs, rats, rabbits and monkeys to fluoride fumes and produced serious damage to kidneys and liver. Some contracted ulcers in the mouth, others degenerative changes in the testicles. Unfortunately, the Kettering scientists did not proceed to relate their findings to human health by adequate follow-up studies on humans. As is so often the case in fluoride research, thoroughly executed and valuable animal experimentation could lead to significant progress in medicine, were the knowledge gleaned from it correlated with clinical observations on humans.

In addition to these experimental data, involving relatively large doses of fluoride, much research is available on damage in domestic animals from minute doses taken on a long term basis.

2. Domestic Animals

My first experience with the veterinary problem occurred during a visit with Prof. F. Liegeois at the Brussels

Veterinary School in 1958. Here I saw living examples of sheep poisoned by fluoride due to air contamination from nearby factories. Their teeth were brown and black, chipped off and worn down, their gums were swollen and ulcerated, their jaws diseased. I was impressed by the painful arthritic joints, by the visible protrusions on their bones called exostoses, by the declining nutritional state of the animals which eventually led to their death.

Prof. Liegeois had been studying fluoride's effect on the calcium metabolism. He showed me his collection of fluorosed bones and teeth. We discussed the manner in which fluoride affects the calcium balance in animals.

Subsequent conferences with Prof. Paul Phillips at the University of Wisconsin, Madison, Prof. C. F. (Shorty) Huffman at Michigan State University, Prof. F. Cohrs of the Veterinary Institute of Hanover, Germany, and Dr. A. L. Obell at the Veterinary Institute, Stockholm, Sweden, furnished me the opportunity to expand my knowledge about the manner in which airborne fluoride damages cattle, horses and sheep.

There is a persistent controversy among scientists on whether or not diarrhea, damage to hooves, reduction in milk, abortions, stillbirths and lack of fertility in cattle constitute a part of the picture of fluorosis.

Opinions and the interpretation of the available research data vary according to whether the scientist represents the farmer or industry. Much research on this subject has been designed expressly for the protection of corporations involved in litigation. Few studies have been made to protect the farmers' interests.

In damage suits against air contaminating industries the following conditions have rendered it difficult to assess correctly the available evidence:

- In exposed areas, there are always days or months when little or no fluoride is present in the air or on the forage. Fluoride determinations of hay or air samples taken

at such times are likely to convince the court that the amounts of airborne fluoride in the involved area were too low to have injured the cattle.

- Vegetation and livestock, many miles distant from an air contaminating factory may, under certain conditions, suffer as much or more than in areas closer to the source.[87, 88] Due to climatic and topographic conditions fallout of fluoride may occur far distant from a given factory, making it difficult to pinpoint the source of the trouble.

- The elaborate techniques used in studies sponsored by industry are so impressive to judge and jury that they are likely to overlook the fact that controls in such studies are invariably inadequate; that the limited number of experimental animals observed cannot reflect conditions throughout a large herd; that the extensive laboratory data quoted by industry-employed scientists are often meaningless because of the wide inconsistencies in fluoride metabolism, as noted in Chapter V.

In Scotland,[153] in India,[154] and at the University of Tennessee[155] experiments have been carried out to determine to what extent protective minerals lessen the threat of fluoride poisoning in cattle. Vitamin C, calcium, aluminum salts have been added to the animals' forage. Thus far, only limited success has been achieved in preventing fluorosis.

3. Poisoning in Humans

The background gleaned from animal experimentation and fluoride poisoning in domestic animals led to the third approach in my studies, namely the exploration of fluoride toxicity in man.

Acute poisoning can result from a single large dose of fluoride either swallowed or inhaled through the lungs. The bulk of cases reported in medical journals are accidents. Rodent exterminants, sodium fluoride or sodium silicofluoride, have been mistaken for an edible substance which

they resemble, such as salt, flour, sugar, starch, baking powder, powdered milk and laxative salts. Occasionally they have been intentionally used for homicidal or suicidal purposes. Two teaspoons of sodium fluoride or one teaspoon of sodium silicofluoride can cause severe illness and even death.

Acute poisoning from a single dose manifests itself at first with violent, bloody vomiting and extremely severe cramps in stomach and bowels. This stage is rarely attributed by physicians to its cause. It has been erroneously diagnosed as "ptomaine poisoning" or "intestinal flu." Subsequently the patient develops numbness and cramps in arms and legs, convulsions and shock.

When the victims come to autopsy, hemorrhages and erosions are found in the lining of the stomach and upper bowels. Little else can be considered characteristic of this kind of poisoning. As in other kinds of poisoning, blood and tissue fluid accumulate in the brain, kidneys, liver and other internal organs. Fluoride is found in the stomach and bowel content and in some of the internal organs. There may be excess fluoride in blood and urine. Also, low calcium levels in blood have been reported.

In a monograph entitled "Acute Fluoride Intoxication" published as Supplement 400 to *Acta Medica Scandinavica* in 1963, I have reviewed the essential data of this disease.

During the past thirty years, eleven mass poisonings have been recorded. Data on some appear in Table 9.

I have described one such mass poisoning. Fortunately it resulted in only one fatality:[156]

On December 19, 1960, at a Rotary dinner in St. Johns, Michigan, the cook mistook a can of roach powder which contained sodium fluoride for baking soda and added it to the dough of banana cakes. Forty to fifty persons became ill, mostly with minor stomach upsets. The cook, a sixty-nine year old woman, tried to relieve her own stomach distress by taking a few teaspoonsful of the same batch of

Table 9

MASS INTOXICATIONS BY FLUORIDE REPORTED IN THE MEDICAL LITERATURE

Authors who reported mass poisoning		Where they took place	Fatalities	Sources
Heydrich	1935	Kiel, Germany	2 out of 14 who became ill	Sodium silicofluoride added to cake instead of sugar
Geiger	1936	San Francisco	3 out of 21	74% sodium fluoride added to pancakes
Anonymous	1940	Pittsburgh, Pa.	21 out of 40	Sodium fluoride mistaken for pancake flour
Lidbeck et al	1943	Salem, Oregon	47 out of 263	Roach powder in scrambled eggs—17 lbs. in 10 gal. of eggs
Black	1961	St. Johns, Mich.	1 out of 40-50	"Baking powder" in banana cakes

roach powder in the belief that it was sodium bicarbonate. She died within a few hours.

The most severe accident on record occurred in the Oregon State Hospital at Salem in 1943.[157] Two hundred sixty-three inmates took ill, forty-seven of them fatally, after eating scrambled eggs. An assistant of the cook had mixed approximately seventeen pounds of a poisonous compound with ten gallons of eggs. The identity of the poison, a roach powder containing 90 per cent sodium fluoride, was not established until approximately twenty-two hours had elapsed. This demonstrates how difficult it is to diagnose the cause of such mishaps. Only a few of the inmates had rejected the contaminated eggs because of a salty, soapy taste. Some complained of numbness of the mouth after swallowing the eggs.

Most fluoride compounds are tasteless and odorless and for this reason have been used for homicidal purposes. Through the courtesy of a Kansas City physician, I was able to study the autopsy material in two such homicides.

On October 14, 1959, a forty-three year old man and his

wife were rushed in a dying state to St. Luke's Hospital in Kansas City. Their daughter had added a few teaspoons of sodium fluoride to a grape drink. In the lining of their stomachs I observed the kind of ulceration which Dr. Murray in London had demonstrated to me in her experimental rabbits.

Among the unusual cases of poisoning related in the medical literature is the death of a three and one-half-year old girl who swallowed a pellet of rat poison which she thought was candy.[158] The amount of sodium fluosilicate was only about 0.6 grams, less than 1 quarter of a teaspoonful. At the other extreme, there is the case of an adolescent girl who had swallowed 35 grams, more than an ounce of sodium fluoride, to commit suicide.[159] Luckily she vomited most of it and thus survived after a stormy illness. These two instances illustrate the wide differences in the fatal dose from person to person. Whether or not poisoning occurs is influenced by the particular compound, the patient's age, his individual response, the promptness and amount of regurgitation following the accident, and other factors.

In several cases on record the poison did not adversely affect the stomach: A thirty-nine year old patient, hours after he had swallowed the poison, suddenly developed shock and convulsions. He died without any warning.[160]

During their convulsions, these patients retain full consciousness. This suggests that the seizures are not epileptic but so-called tetaniform convulsions due to low calcium levels in blood of the type previously described in my patient from Saginaw (page 105) due to persistent intake of minute amounts of fluoride in water.

In several of the poisoning cases reported in medical journals the illness was dominated by hives. Fluoride like the other halogens can produce various kinds of allergic phenomena.[156,188a]

In contrast to *acute* fluoride poisoning with large doses, the medical reports on *chronic* poisoning from persistent

intake of minute doses are principally concerned with teeth and bones.

In industry, only a limited number of cases of poisoning due to fluoride as an air contaminant have come to light. For understandable reasons, industrial physicians who encounter such cases avoid publicity. They rarely report them in medical journals. If litigation is threatened, the case is usually settled out of court.

In addition to Roholm's classic description, a few instances have been recorded from Scotland,[161] Norway,[162] and in the U.S.A.[163] Damage to health is minimized in these reports. Essential details are lacking.

Abnormal bone changes were demonstrable by X-ray[161] in 56 out of 437 workers in an aluminum plant near Fort William, Scotland. As in Roholm's cases, some workers complained of stomach and intestinal disorders and of cough. However, no attempts were made to carry out detailed clinical studies concerning these complaints. Perhaps it was not realized at that time that stomach disorders constitute a major part of chronic fluoride poisoning. Interestingly, school children living near the Fort William factory, exposed to fluoride fumes, had mottled teeth.

The first report of fluorosis from drinking water came in 1935 from Dr. F. Speder, an X-ray specialist of Casablanca, French Morocco. He described in detail[164] the bone changes in seven cases in the Moroccan phosphate areas. He attributed the disease to fluoride in food and water. He also observed extensive calcium deposits in lymph glands throughout the body.

About the same time (1937), a British health officer, Dr. H. E. Shortt,[165] discovered an extensive belt of fluorosis in southern India. This led to investigations of dental and skeletal fluorosis by a team of scientists under the leadership of Prof. C. G. Pandit. Most wells in the area contained less than 3 ppm of fluoride, but some as much as 6.7 ppm.

Subsequently, numerous medical reports of serious crippling from fluoride naturally in water have appeared from India, Italy, South Africa, East Africa, Argentina, Arabia, China and Japan (Table 10). In India, large segments of the population are affected. In recent years, Dr. A. H. Siddiqui[166] of Hyderabad first carried out systematic studies.

Seven of his thirty-two cases from the Nalgonda area showed evidence of hearing disturbances, others of kidney disease. The concentration of fluoride in water ranged from 5.2 to 11.8 ppm.

Table 10

REPORTS OF FLUOROSIS IN NATURAL FLUORIDE AREAS

Authors	Country	Number of Cases	F^- In PPM In Water
Speder 1936	Morocco	7	
Di Cio et al 1939	Argentina	1	
Capizzano et al 1939	Argentina	9	
Mascheroni-Reussi 1940	Argentina	3	2, 15, 16
Pandit et al 1940	India	887	0.6 to 6.7*
Silva et al 1940	Argentina	34	
Ockerse 1941	S. Africa	8	11.78
Linsman-McMurray 1943	Texas, U.S.A.	1	1.2 to 5.7
Raffaele 1944	Argentina	1	
Khan-Wig 1945	India	1	"very high"
Lyth 1946	China	4	2.4 to 13.1
Frada-Mentesana 1953	Sicily	49	3.0 to 5.0
Walters 1954	Arabia	9	2.0 to 8.0
Hamamoto 1954	Japan	25	6.0 to 13.0
Garibaldi 1954	Italy	2	3.0
Murthi 1955	India	1	1.2 to 11
Rao 1955	India	1	7.2
Siddiqui 1955	India	32	5.2 to 11.8
Nalbone-Parlato 1957	Italy	1	5
Werbeloff-Sender 1958	S. Africa	1	
Fichardt et al 1958	S. Africa	1	1.2 to 14
Odenthal-Wieneke 1959	Germany	1	7.5
Azar et al 1961	Arabia	2	0.8 to 3.45
Pinet et al 1961	N. Africa (Souf)	49	
Jackson 1962	S. Africa	22	2.6 to 13.0
Singh et al 1963	Panjab, India	55	1.2 to 14.2
Kumar and Kemp-Harper 1963	Arabia	19	6.0(asNaF)
Frada et al 1963	Sicily	63	Up to 5.2

*Mainly 1 to 3 ppm

For references see Waldbott[84]

Table 11

INCIDENCE OF FLUOROSIS

Author	Country	F- Content of Water Supply In PPM	No. of Inhabitants	Afflicted with Fluorosis
Macheroni, Reussi[48]	Argentina	not stated	154	14 or 9%
Hammamoto et al[141]	Japan	6 to 13	247	25 or 10%
Pandit et al[50]	India	0.6 to 6.7*	1192	887 or 74.4%

* Mainly 1 to 3 ppm.

In 1958, Prof. A. Singh's attention was drawn to fluoride when he investigated the cause of palsy in 200 patients, twenty-one of whom were seriously crippled with spinal arthritis and paralysis of arms and legs. Their bones were thickened, ligaments and tendons calcified (Fig. 20-25). Fluoride concentration in bones ranged from 700 to 7000 ppm (dry weight); in urine from 2.3 to 13.4 ppm and blood from 0.5 to 6.1 ppm (average 1.5 ppm). Prof. Singh observed an unusual condition on the teeth of his cases. Bone-like deposits at the outer surface of the roots tended to loosen the teeth in their sockets, predisposing them to gum disease (Fig. 2).[167]

From a different part of the world, an oasis in the Sahara, comes a similar report by Dr. Pinet and co-workers.[168] Here the water contains between 2.8 and 4 ppm of fluoride naturally. Because of extreme heat, inhabitants drink more than average amounts of water. A detailed diagrammatic description of the bone changes in the spine disclosed a disease process closely resembling the spinal changes frequently encountered in old age, in our country, where it is attributed to aging.

In other tropical areas such as Saudi Arabia, Dr. H. A. Azar and co-workers[93] were confronted with fluorosis of bones from drinking water containing as little fluoride as 0.8 to 3.4 ppm.

In Italy's volcanic areas near Mt. Vesuvius and Mt. Etna, conditions differ from those in the tropics. Here the climate is moderate; people do not drink excessive amounts of water. Malnourishment which tends to aggravate fluorosis is not more frequent than in many areas of the U.S.A.

ILLUSTRATIONS

22. SKELETAL FLUOROSIS

X-ray of forearm in skeletal fluorosis from Northern Sicily where water contains fluoride naturally at 3 to 5 ppm. The grotesque protrusions from the surface of the bone represent newly formed bone of poor quality. The marked density of bone in the center narrows the bone marrow space and tends to interfere with its activity of forming blood corpuscles. Courtesy, Dr. G. Nalbone.

23. SKELETAL FLUOROSIS

The ligament between the two bones of the forearm is a favorite seat for new bone formation in fluorosis. Courtesy, Dr. L. Werbeloff, Groote Schuur Hospital, Cape Town, South Africa.

27. CALCIFIED ARTERY IN FLUOROSIS

Linear shadow at left of bones represents calcification (hardening) of an artery. Similar cases reported in patients at only twenty-five years of age. Courtesy, Dr. G. Nalbone.

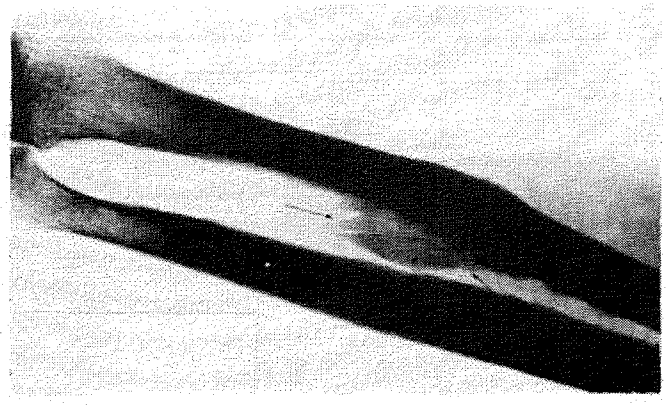
KENHARDT'S DISEASE

Bone deformities reported from Kenhardt, South Africa, simulate, but are unrelated to, rickets. They were proven to be caused by fluoride naturally in water.

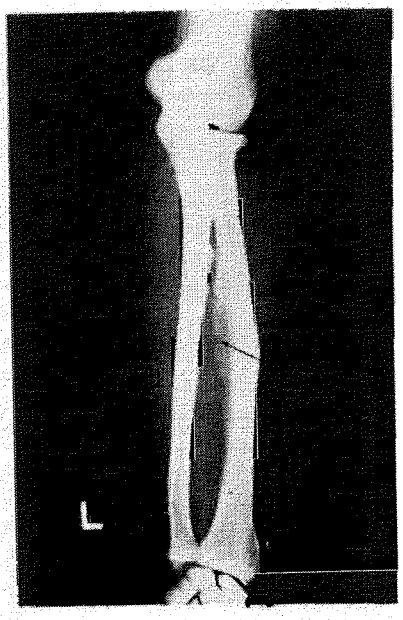
31a. Initial stage in a two and one half year old colored girl whose mother had been drinking 2.6 ppm fluoride in water for several years prior to child's birth. The girl has been drinking this water since birth.

31b. Twelve year old boy with the same history as case "31a."

31c. Advanced stage in a four year old girl. For the first three years after birth she drank water containing 10 ppm fluoride; subsequently water with 4 ppm of fluoride. Courtesy, Professor D. G. Steyn, Atomic Energy Board, Pretoria, South Africa.



22



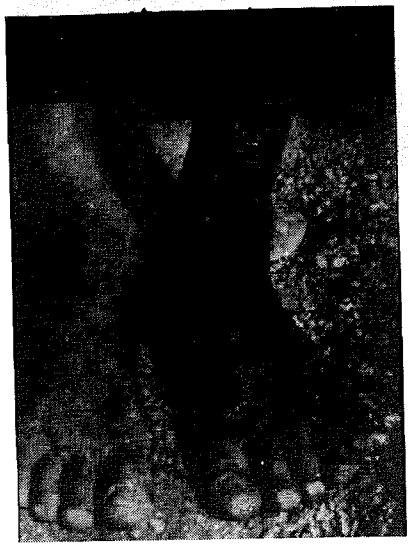
23

27

Kenhardt's Disease

31a

31c



31b

Yet in Italy fluorosis is common. In 1961, Prof. G. Frada, University of Palermo, afforded me an opportunity to examine some of his patients. He and members of his staff escorted me to several villages of northern Sicily where the water supplies naturally contained fluoride between 3 and 6 ppm. These patients had characteristic arthritis in the spine and other joints. Many had chronic stomach and bowel disturbances. Prof. Frada[169] has recently been studying premature calcification of arteries in his country as reported in *Minerva Medica,* 1963, a heretofore completely unexplored area in fluoride research. Like hardening of ligaments, calcification of arteries prevalent in aging persons might conceivably be related to a gradual accumulation of fluoride throughout a person's lifetime.

Judging from the many reports, fluorosis assumes a different picture depending upon where it occurs.

Such variations are not unexpected from area to area. They can be accounted for by the mode of living in the respective countries, the general state of nutrition, ingredients other than fluoride in water and soil. In India where malnutrition and unsanitary conditions prevail, palsy of arms and legs is more prevalent than in other countries. In southern Italy where people live largely on fish, fruit and spaghetti, about one-half of the cases are afflicted with stomach and bowel disorders, whereas palsy is rare. In North Africa dates and bananas are the staple food. Here the changes in the skeleton occur early; few, if any, other disturbances are described. In the Kenhardt area of Africa, a disease has been described characterized by deformities in the legs resembling rickets and causing rheumatic pains.[170] (Fig. 31). Scientists have been searching for some other factor prevailing in that area which they believe potentiates and modifies the effect of fluoride in water.

In discussing fluorosis from drinking water in the U.S.A. it is desirable to review the death of the twenty-two year old soldier, previously mentioned,[44] who had resided in

three Texas cities most of his life where fluoride in water ranged from 1.2 to 5.7 ppm (Table 12).

Table 12

FLUORIDE CONCENTRATION IN WATER IN THE LINSMAN-McMURRAY FATALITY

The soldier resided for	7 yrs.	2 yrs.	7 yrs.	2 yrs.	3 yrs.	(Average Per year)
where water contained fluoride at PPM						
Misprinted version:	12.0	5.7	4.4	trace	4.4	(6.6)
Corrected version:	1.2	5.7	4.4	trace	4.4	(3.4)

In the Army Hospital in San Antonio, where he was admitted because of a chalazion (stye), routine X-rays disclosed extensive calcium deposits in bones, joints and ligaments, particularly where muscles are attached to the bones. The soldier eventually succumbed to a kidney ailment. At autopsy, his bones showed an extraordinary accumulation of fluoride, as much as 8,000 ppm (Fig. 26).

A lively controversy has arisen regarding the cause of his death. Proof that fluoride in water was responsible for the fatal kidney disease would constitute the most potent indictment of fluoridation. The attending physician, Dr. Joseph Linsman, stated that he was unable to decide whether or not the kidney disease was due to excess fluoride intake.

At the age of fifteen the patient had suffered an injury to one of the kidneys. Had there been permanent kidney damage the Army would have rejected him for service. Furthermore, only *one* kidney had been injured whereas at autopsy *both* kidneys had nearly completely disintegrated. As a rule, damage to one kidney does not harm the other. Since research shows that fluoride naturally in water does damage kidneys,[166,171] it is logical to conclude that fluoride caused death. Nevertheless, whether fluoride originated the kidney disease or whether the weakened kidney, unable to efficiently eliminate fluoride from the system, led to fluoride poisoning is like deciding which comes first—the chicken or the egg.

There was another bone of contention: The concentration recommended for fluoridation is 1 to 1.2 ppm. Had this man, with one damaged kidney, died of fluoride poisoning precipitated by drinking water containing fluoride naturally at 1.2 to 5.7 ppm, it would demonstrate that fluoridation provides no margin of safety.

The P.H.S. literature quoted the concentration of fluoride in the town of Spur, Texas, at 12.0 ppm. Dr. Cox, the originator of fluoridation referred to this case[172] in the *Journal of the American Dental Association* as one "with a history of exposure to 12 ppm in water." During my search of the literature I learned that the original report in the *Journal of Radiology*[44] contained a printing error. In a subsequent issue of the same *Journal*, Vol. 41, page 497, Drs. Linsman and McMurray had corrected the 12 ppm concentration to 1.2* ppm (Table 12).

This is a horse of a different color. 1.2 ppm is the concentration widely proclaimed by the U.S.P.H.S. as absolutely safe. Even after the error was publicly called to the attention of the P.H.S., their scientists continued to cite 12.0 ppm in their article[173] as the correct figure.

The erroneous "12 ppm" served as a powerful propaganda weapon in the promotion of fluoridation. Strange as it may seem, this misprint was utilized, on one occasion, to raise doubts regarding my intellectual honesty:

I had submitted an article on fluoride's effect to the *Michigan State Medical Journal* in 1955. I mentioned the Linsman-McMurray case, using the corrected 1.2 ppm concentration. The Michigan State Health Department showed the editor the original article with its misprint of 12.0 ppm, thereby implying that I was the one who had intentionally distorted the truth.** The editor failed to personally check

* A later report by the U.S.P.H.S.[89] gives 2 figures for the fluoride concentration in Spur, namely 1.4 to 3.1 ppm.

** Dr. Wilfred Haughey, Editor *Mich. State Med. Journ.* to Dr. G. L. W. 4/22/55.

the page in the journal, cited in my bibliography, on which the correction had appeared – and refrained from publishing my article.

There was another sidelight to this case. The late Dr. F. F. Heyroth, P.H.S., and Kettering Laboratory scientist, after stating in his review article that the Linsman-McMurray case occurred from drinking water containing fluoride at 4.4-12 ppm, mentioned that "a somewhat similar case had been reported from South America."[174] His wording led the reader to conclude that the fluoride concentration in the second case was near 12.0 ppm–far above the so-called safe concentration–not around 2 ppm as reported by the Argentinian author.[45]

In the promotional literature the high concentration implied a wide margin of safety to the medical and dental profession and that there could not possibly be any harm at 1 ppm. Dr. G. F. Lull, Secretary of the AMA, must have based his opinion on the alleged high natural fluoride concentration of water in the two cases when he wrote to me on April 23, 1954.

"It is a well known fact, however, that no untoward effects are shown in individuals taking as high as 10 parts per million in the water supply."

For years I attempted to obtain the original Argentinian publication and to communicate with its senior author, Prof. C. Reussi of Buenos Aires. I finally obtained copies of his article through the Argentinian Embassy. To my delight it was accompanied by another carefully documented case report by Dr. J. F. Raffaele[175] of the same city. Both articles had been written to warn Argentinian citizens against the hazards of fluoride in water.

By a strange coincidence, within a week after I had received the two documents, at the International Congress of Internal Medicine in Philadelphia in 1958, I came face to face with a gentleman on whose lapel I read the name "Reussi". He was amazed to find someone in this far away

land who had been looking for him for so many years. Stimulating discussions with Dr. Reussi followed about this and eight other cases of fluoride poisoning which he and his colleagues had described.

Dr. Reussi's case was a twenty-three year old woman with an ectopic bladder, a birth defect in which the bladder was misplaced outside the abdominal wall. It had induced a kidney disease which caused greater than average skeletal storage of fluoride. Unfortunately, in the two cases, those of Linsman-McMurray and of Reussi, organs other than bones were not analyzed for their fluoride content. Just how much fluoride had accumulated elsewhere in the body, particularly in this patient with a lifelong kidney disease, would have been of extraordinary interest.

In their survey of 117 persons in a natural fluoride area, Drs. Reussi and Macheroni[45] found nine with marked skeletal changes.

Dr. Raffaele's case was a young man with extensive arthritis of the spine associated with severe pains. His higher than normal blood calcium level indicated a disturbance of the vital calcium-metabolism which Dr. Raffaele attributed to fluoride.

The data on experimental fluoride poisoning; the personal observations which I had made on fluorosis in domestic animals; the extensive study of acute poisoning in humans, especially the nature of stomach and bowel disorders and the occurrence of hives, an allergic condition; finally, a careful review of the many scientific papers on chronic poisoning, gave me the desired background to interpret what I had observed clinically. With this background, I proceeded with my research. Particularly I sought means to establish criteria on how to distinguish chronic fluoride poisoning from the various ailments which simulate it.

CHAPTER NINE

FACING THE PUBLIC

Once I had acquired some knowledge on fluoride, it was inevitable that I would be dragged into the political controversy whether I liked it or not. My first experience in addressing a public gathering on fluoridation turned out to be embarrassing.

A lady, obviously cultured and intelligent, phoned me from Akron, Ohio. Could I address a friendly group of citizens at her home, she asked. Her name was Mrs. Irene Harrison. She had contacted several Akron physicians opposed to fluoridation but none felt qualified to speak. One of them had suggested my name to her. He had learned that I was studying the subject.

I saw nothing wrong with acceding to her request. My medical society had asked me many times to address lay groups on the subject of allergy. Scientists in favor of fluoridation were constantly addressing lay groups.

I was somewhat taken aback when she asked what fee I would expect for speaking. Fluoridation had interested me as a scientist. I had been looking into it in order to satisfy my intellectual curiosity. I would not expect to be recompensed for speaking on this subject.

When Mrs. Waldbott and I arrived at Akron's airport, a chauffeur with a Cadillac awaited us. He drove us to a palatial mansion in the center of Akron. Mrs. Harrison, he said, was the daughter of F. A. Seiberling, founder of the Goodyear Tire and Rubber Company and the Seiberling Rubber Company.

The home, baronial Stan Hywet Hall, reminded us of an English castle. It was set far back from the road, with stately lawn, majestic trees, formal gardens and statues. Mrs. Harrison welcomed us and showed us to our room. The furnishings were replete with antique art pieces, paintings and sculptures by old masters, every one a collector's item.

My wife was so intrigued by what she saw that her mind wandered far afield from fluoridation. She even failed to note the way up the spacious stairway, through the corridors to the bedroom assigned to us. Later, upon retiring, she had difficulty in finding her bedroom.

At dinner we met Mrs. Harrison's brother, Mr. Seiberling, and other invited guests. The dinner conversation turned toward antiques and the history of the place. The Seiberlings had personally selected most of the art treasures on their frequent European trips. The mansion, the park, and the antiques were about to be donated to the City of Akron. F. A. Seiberling, the father, now in his late nineties, was confined to bed in a wing of the home, with nurses in constant attendance.

His son narrated how F. A. Seiberling, after many ups and downs in business, had bought an old rickety plant in Akron with $13,500 of borrowed money. Here he built bicycle tires by hand. He named his company after the founder of the rubber industry, Charles Goodyear, an Englishman, who died penniless in 1860. F. A. struggled from day to day to meet his payrolls and to defray the cost of materials. With the advent of the automobile tire he climbed to success. Then came the depression years, 1920-21. The company went into the red to the tune of sixty million dollars. An eastern banking house, after long and frustrating negotiations, provided new working capital. With it went control of the company. Mr. Seiberling was squeezed out, soon to found his own rubber company.

While this conversation was going on, people began to

arrive. They made their way into the mansion's spacious ballroom where an organ recital was under way.

I had consented to share the rostrum with a Mr. Rollin Severance from Saginaw, Michigan, whom I had met at dinner that evening for the first time. He was a successful tool manufacturer, most fastidious about the accuracy of his statements. He had rallied a group of Saginaw citizens to the cause against fluoridation. This brought upon him the usual fate of opponent leaders: A violent campaign by members of the dental profession to disparage him.

As first speaker, I confined my discussion to the scientific data I had gleaned in my survey of the literature.

Mr. Severance's talk focussed upon an extraordinary document which he had just secured: The Minutes of the Fourth Annual Conference of State and Territorial Dental Health Directors with the P.H.S. and the Children's Bureau in Washington, D. C. June 6 to 8, 1951.[69]

He had contacted numerous government agencies for a photostat of these minutes. Finally, he was told Sept. 22, 1953, by L. H. April, Chief, Public Inquiries Branch, P.H.S., that the minutes "were recorded for administrative use only, and are not available for distribution." Following the initial release, the minutes were designated strictly "classified." Eventually Mr. Severance did secure a photocopy from a Seattle citizen whose Congressman, T. M. Pelley, had given her the copy assigned to him. This document revealed facts vital to the understanding of the promotion of fluoridation.

At the Conference, J. W. Knutson, D.D.S., Asst. Surgeon General, Chief, Division of Dental Public Health, presided. Surgeon General Leonard Scheele made welcoming remarks. The late Frank Bull, D.D.S., Wisconsin Dental Health Director, briefed his fellow state dental health directors on how to put fluoridation across in communities. Dr. Bull instructed those at the Conference how to "build a fire under" the local medical and dental societies,

how to obtain endorsements, how to win the press, how to use civic organizations ("The PTA is a honey when it comes to fluoridation"– page 45 of the *Minutes*), how to persuade chemists and engineers (he referred to them as "astrologers") and how to play one group against another. He advised the attending health officials to ridicule all opposition.

In their enthusiasm for a new project this kind of promotion would not have been objectionable had the Conferees not acknowledged at the same time that they had no convincing evidence of fluoridation's efficacy in prevention of tooth decay nor had they proof that it was safe.

"This toxicity question," Dr. Bull acknowledged, "is a difficult one. I can't give you the answer on it." "When you get the answer. . .please write to me at once, because I would like to know" (page 25).

At the Conference Dr. Bull acknowledged that there was vigorous opposition to fluoridation by many scientists (pages 53-55). He told his colleagues concerning the defect of tooth enamel known as mottling, the first sign of chronic systemic poisoning by fluoride: Describe such teeth due to drinking fluoridated water as "pearly egg shell white," and as "the most beautiful teeth that anyone ever had" (page 21).

"We don't say there is no such thing as fluorosis even at 1.2 parts per million which we are recommending (page 24). We have got to have an answer. Maybe you have a better one."

Mr. F. J. Maier, senior sanitary engineer, Division of Public Health, disclosed that a considerable number of children drinking fluoridated water would have mottled teeth: "Some 10 to 20 per cent fluorosis in a fluoridated community would not be objectionable" (page 65), he said. An even larger percentage of mottling has now been officially reported in the experimental cities as shown in Table 13, composed from data gleaned exclusively from dental and

Table 13

INCIDENCE OF MOTTLED TEETH DUE TO FLUORIDES IN WATER

City	PPM Fluoride in Water	Children Examined	Mottling Observed	Degree of Mottling	Reference
Newburgh, N. Y.	1.2	438	17.8%	46 questionable 26 very mild 6 mild	Journal Amer. Dent. Ass'n Vol. 52, page 323, 1956
Grand Rapids, Mich.	1.0	419	23.39%	61 questionable 30 very mild 7 mild	Journal Amer. Dent. Ass'n Vol. 65, page 611, 1962
Kewanee, Ill.	0.9	123	47.2%	43 questionable 13 very mild 2 mild	P.H.S. Publ. 825, page 131, 1962
Chandler, Ariz.	0.8	95	57.8%	37 questionable 9 very mild 6 mild 2 moderate 1 severe	P.H.S. Publ. 825, page 79, 1962
Tucson, Ariz.	0.7	316	62.02%	143 questionable 38 very mild 10 mild 5 moderate	Public Health Reports Vol. 68, page 503, 1953
Marion, Ohio	0.4	263	42.2%	96 questionable 13 very mild 2 mild	P.H. Rep. Vol. 57, page 1165, 1942

According to H. T. Dean, "Classification of Mottled Enamel Diagnosis," Journal American Dental Association 21: 1421-26, August, 1934, "very mild" indicates that 25% of the tooth's surface has been adversely affected; "mild" 50%; "moderate" the entire surface.
"Severe" mottling denotes corrosion, pits deeper and often confluent, stains widespread, ranging from chocolate brown to almost black.
The above data pertaining to the same survey first appeared in Public Health Reports August 7, 1942. Some have been reprinted in P. H. Reports Vol. 68, pages 503 and 504 and in P.H.S. publication 825, 1962.

public health publications. In Grand Rapids, Michigan, after seventeen years of fluoridation 19.3% of white and 40.2% of Negro children had "fluoride opacities" (mottled teeth) according to the *Journ. of the American Dental Assoc.*, Vol. 65, page 610, 1962.

"We never use the term 'artificial fluoridation,'" Dr. Bull cautioned: "There is something about that term that means a phoney—we call it 'controlled fluoridation'" (page 24). Dr. Bull advised his fellow dental directors that, no matter what developed, fluoridation must always be hailed as a great success: "Now, why should we do a pre-fluoridation survey? Is it to find out if fluoridation works? We have told the public it works, so we cannot go back on that" (page 35).

The conferees established a policy of bypassing citizens' wishes in the matter. They advocated that fluoridation should not be submitted to a vote:

"If you can, I say if you can because five times we have not been able to do it, keep fluoridation from going to a referendum" (page 47), Dr. Bull advised.

All this constituted reason enough for designating the Minutes of this Conference strictly classified. It is worthy of note that every one of the directives laid down at this Conference was subsequently carried out to the letter not only in the U.S.A. but throughout the world.

In reporting this briefing session to the citizens assembled in the ballroom that night, Mr. Severance harshly criticized health officials who participated at the Conference for disregarding the fate of individual citizens.

The next day, the May 25, 1954, Akron *Beacon Journal* repeated the term "quack" used by Mr. Severance to designate one of the health officials. Since I had shared the same platform, readers of the account were bound to infer that I too approved of this designation for the official in question. It implied to the readers of the *Beacon* that all professional men promoting fluoridation were included.

This episode embarrassed me no end. It has caused some of my Akron colleagues to look upon me with disdain even to this day.

A feature deserving special attention in Mr. Severance's talk was his reference to the Grand Rapids mortality statistics. He had studied the death rates in Grand Rapids, Mich., fluoridated since 1945. According to the 1950 U. S. Census, deaths in Grand Rapids, the most widely publicized experimental town, had risen sharply after 4 years of fluoridation. Deaths from heart disease, cancer, intra-cranial (brain) disease, diabetes and hardening of the arteries had increased from 25 to 50 per cent over those in Michigan as a whole. This information was published in the Grand Rapids *Press* on July 28, 1955.

Four separate efforts had been made by the health department to explain the rise in mortality:

1. The data were retabulated under new headings according to anatomical location of the respective disease. This relieved the load of deaths in the cancer category. For instance, cancer of the stomach and of the brain were no longer tabulated as cancer but as disease of the stomach or as "intra-cranial lesions," meaning any disease above the jaw.[176]

2. The Health Department claimed that the rise in deaths was due to an increase in population. However, Dr. A. L. Miller, U. S. Congressman, formerly Nebraska State Health Commissioner, pointed out that between the 1940 and 1950 U. S. census the Grand Rapids population had increased by only 7.8 per cent,* deaths by 25 to 50 per cent.[177]

In order to counter this evidence, the Grand Rapids Health Department presented revised Michigan population figures. To provide an increase in population corresponding

* Miller, Dr. A. L., U. S. Representative from Nebraska, former Nebr. Health Commissioner to Prothro, Dr. W. B., Director Dept. of Publ. Hlth., Grand Rapids, Mich., May 26, 1952.

with the increase in deaths, five different methods of estimating were used between 1940 and 1950. They implied a general exodus of people from Grand Rapids in the early 40's and a corresponding influx back to the city just prior to the '50's. However, Mr. Severance checked the school census records in order to determine whether such a migration had occurred. He proved that no substantial change in population had taken place during these years, thus voiding the health department's claim.

3. The health department made another claim: The high death rate pertained to all of Kent County instead of solely to Grand Rapids.

Before fluoridation, according to the official U. S. vital statistics, the death rate in Grand Rapids and in the balance of its Kent County was practically the same as the national average. Had the death rate in Grand Rapids followed the pattern of the nonfluoridated portion of Kent County, there would have been some 600 less deaths in the city* by 1950 after four years of fluoridation.

4. Finally the Grand Rapids Health Department claimed that *prior* to fluoridation the Grand Rapids death rate had been higher than the U.S.A. averages.

Again Mr. Severance demonstrated no significant differences in the ratio of city deaths to deaths in the county at the time of the 1940 census, but a radical difference in 1950. Using official figures, he revealed that in 1950 three out of ten of all city deaths were in excess of the 1939-40 city-county ratio.

* San Francisco (partially fluoridated since August 2, 1952; completely since July, 1955) is another U. S. city where comparisons with nonfluoridated surrounding areas are possible. According to the San Francisco *News-Call Bulletin*, page 23, Dr. Ellis Sox, City Health Commissioner, reported on July 29, 1964, that San Francisco continues to have the highest death rate and lowest birth rate in the state and nation. The nonfluoridated Bay area death rates, per 1000 population in 1963, were 9.3 in Alameda County, 6.5 in Marin, 6.6 in San Mateo — against 13.3 in San Francisco, the *Bulletin* stated.

Regardless of what position one takes on this question, Mr. Severance deserves credit for having brought these facts into the open and to the attention of the public.

A few months after the Akron meeting I consented to appear at one of the Toledo radio stations. I, alone, was to debate fluoridation with two proponents. As I later came to recognize, this arrangement is routine in fluoridation promotion—one opponent pitted against two or three proponents. One of the proponents happened to be a friend of mine, an allergist. He was president of the local medical society. A few years previously he had taken care of my practice during my absence from Detroit. Here, I felt, was my opportunity to convince my friend of the project's hazards. He had known me for years. He was fully conversant with the calibre of my research in allergy. His allergic patients as well as mine would be among the first to suffer damage from fluoride. Yet, to my dismay, I learned that he was unwilling to listen – his mind was made up. Prior to my arrival he had already taken such a strong position in favor of fluoridation that his viewpoint seemed to be unalterable.

In Dayton, Ohio, several opponent physicians asked me to speak over the radio. One of them, employed in a hospital, soon realized that his position might be jeopardized by openly opposing the Public Health Service. The other members, due to protests by local dentists, were summoned to appear before their medical society. This dampened their enthusiasm for publicly expressing their convictions.

I was to debate the issue at a radio station with a P.H.S. official who had initiated the drive for fluoridation shortly after he had moved to Dayton. The station's policy was to discuss the format of the broadcast sufficiently in advance to satisfy all participants. I arrived early as instructed. However, neither of the two commentators showed up until actual broadcast time. This made it impossible for me

to forestall a rigged setup. Some of the questions posed were loaded.

Again I asked myself, should I continue to expose myself to repeated embarrassment in public? The research in which I was engaged was bound to suffer if I became politically involved. Moreover, I was not given to politics nor to the quick repartee needed in the political arena. I would be continuously exposed to the innuendo of professional politicians.

Yet, citizens in numerous cities were anxious to obtain data on fluoridation which were not accessible through the usual news media. Since practically all research grants originated with proponent organizations or promoting industry there were few scientists with research experience to present the opponent case. True, numerous physicians were opposed to fluoridation, but they dared not register their views openly. Some lay persons had accumulated a wealth of valid data. They were amply qualified to debate the subject with proponent scientists and to competently counter their claims. Unfortunately they lacked the titles and degrees necessary to impress the American public. How could I refuse these people?

In pondering this question I could not help recalling an experience which occurred in October, 1954. A. E. Seyler, D. D. S., the representative of a Detroit dental society rang the doorbell of my home. He had learned that I had encountered cases of poisoning from fluoridated drinking water. He and his colleagues, he told me, were eager to learn about my research. Would I honor them by appearing at a meeting of the Eastern Dental Club at the Whittier Hotel, November 1, 1954?

I had reason to be suspicious of his motives. Why would a dentist, especially the leading promoter in the Grosse Pointe area, be interested in this purely medical subject? I had already asked several medical societies for an oppor-

tunity to present my data to the general membership. They had not taken any action.

Dr. Seyler assured me that my work was of vital interest to dentists.

Would I be the only speaker, I inquired?

No, he replied, there would be two discussants, one an official of the American Dental Association in Chicago, the other from the Michigan State Health Department, Lansing. I was confronted with the arrangement, two against one, customary in fluoridation promotion.

Nevertheless, his proposition intrigued me. I assumed that the two men would be scientists. I was so sure of my subject that I would not have hesitated to tackle an Albert Einstein.

I volunteered to limit my presentation to twenty minutes. Dr. Seyler's plan that each of the discussants be given time equal to that allotted to me did not seem fair, in view of the fact that the meeting, according to Dr. Seyler, was scheduled for the purpose of featuring my evidence. Why should the discussion consume twice as much time as my presentation? Dr. Seyler pointed out that the two gentlemen were coming a long way, one from Chicago, the other from Lansing. Eventually I acceded to his persuasive arguments.

I asked for assurance that each speaker be held to his time limit and that my full qualifications be read as I presented them to him so that the dentists would learn about my scientific training and background in research.

This Dr. Seyler promised me faithfully.

On my arrival at the Whittier Hotel, J. Roy Doty, Ph.D., Secretary of the American Dental Association's Council on Dental Therapeutics was briefing the Dental Club's officers on how to conduct the meeting.

The Chairman introduced his Chicago guest with much oratory about his former positions, accomplishments, background and qualifications. Based on elaborate graphs and

charts difficult for many to comprehend, Dr. Doty gave a lengthy discourse on the "great benefits" of fluoridation. He took considerably more time than the 20 minutes allotted to him. The next speaker, Chester Tossy, D.D.S., dental health official and promoter of fluoridation for the Michigan State Health Department, with little or no research experience on fluoride, read a speech prepared by his department. It implied that practically every statement made by me in my survey of the scientific literature on fluoride misconstrued or distorted the available evidence. It was designed to convince the audience that I was not only incompetent but medically dishonest. By the time the two speakers had finished, many in the audience had heard enough and began to leave. Whatever I said fell on deaf ears.

My qualifications were not read. The Chairman introduced me about as follows:

"Our next speaker will be Dr. G. L. Waldbott, a Detroit physician who has also carried out some research."

After I had finished, the two men who had already used much more than their allotted time proceeded to downgrade my work further. It was close to midnight when, as a gesture of fairness, I was given a chance for rebuttal in a near empty hall. The misinformation about my data had been so overwhelming and all-encompassing and the hour was so late that an attempt to reply would have been futile. With slight variations the pattern of this meeting has been repeated wherever dentists or scientists have dared to publicly face proponents.

The meeting had achieved its purpose. Some of my friends who, prior to the meeting, had studied the scientific articles from which I had quoted were now so confused that they felt impelled to re-examine them. They wondered whether the printed words which they had read in scientific documents had disappeared from the pages.

To crown the performance, the chairman handed me a

gallon bottle of whisky, a token of his society's appreciation of my eagerness to be led to the slaughter. I had no choice but to accept it. To refuse would have been ungracious.

The bottle stood untouched for several years in a cupboard of my home as no member of the family cared to be reminded of that occasion. One morning I noticed that all but a few drops of the whisky was gone. A maid had just been discharged because of the strong odor of liquor that had permeated our home too often when she was around. At least someone had profited from my discourse on fluoridation before the Eastern Dental Club at the Whittier Hotel.

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The following fall brought another disappointing experience in Oroville, California. I was to appear before the State Public Utilities Commission Oct. 20 to 22, 1955, as an expert witness on behalf of the California Water Service Co. Without prior consent of the water users, this company had refused to carry into effect instructions of city officials to add fluoride to Oroville and Butte County water supplies.

I had spent many hours preparing myself for the occasion. It was difficult for me to arrange my office routine so that I could absent myself long enough to make the trip.

The P.H.S. paraded numerous proponent health officials before the Commission, many of them without research experience on fluoride. Some of these witnesses merely stated that the organizations they represented had endorsed fluoridation. On the second day the referee announced he would not be able to complete the hearing; that only proponent witnesses would give testimony at this session and that the hearing would have to be resumed at a future date.

The long trip to California for which I had paid out of my own pocket had been in vain. Nevertheless, it did serve one good purpose. I had learned much about the

weakness of the case for fluoridation. Dr. F. A. Arnold, Jr., Director of the National Institute of Dental Research, U. S. Public Health Service, acknowledged on the witness stand that he had no proof of the safety of fluoridation, that he "couldn't possibly have."

Dr. H. Trendley Dean, the "father of fluoridation," under cross-examination was forced to acknowledge that the graphs and charts, upon which he had based his theory that fluoride makes teeth decay-resistant, were invalid according to standards which he himself had established. These standards were: an unchanged water source and continuous exposure of the children under observation.[176a]

However, the sheer weight of titles and numbers of public health officials, professors at universities who were recipients of P.H.S. grants, political dignitaries of dental and medical organizations who appeared as so-called expert witnesses inevitably influenced the decision in favor of fluoridation, a pattern characteristic of future court actions in other U. S. cities and abroad.

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Many people in this country look upon anyone who has risen to the top of his profession as an authority on all matters. Had Claire Booth Luce, the noted writer and diplomat, George Meany, the President of AFL-CIO, and Richard J. Daley, Mayor of Chicago, taken the time to avail themselves of all the facts about fluoridation and had they examined them on their own, they would not have permitted their names to be used for its promotion. Yet, they endorsed the project. Similarly, a popular movie star who publicly expresses his views on a subject with which he is only superficially conversant often carries more weight and reaches more people than the most competent scientist who has made a time-consuming, painstaking study of an involved scientific subject.

Views of respected community leaders who have accepted the word of friends or colleagues; opinions of judges, un-

able to differentiate between valid scientific studies and research carried out to prove a predetermined thesis; statements by policy-making members of a medical or dental organization; plus persistent downgrading of scientists who have produced evidence unfavorable to fluoridation, have all effectively swayed public opinion in this country. In the past, abuse and ridicule have been the fate of many who have been critical of practices in medicine which eventually were proven hazardous as documented by the Australian Professor of Chemistry, John Polya, in his recent book, *Are We Safe?*[177a]

I had not fared too well, thus far, in my endeavor to assist those who needed help. I now realized more than ever that on the political level my efforts could never meet with success. Although I was not cut out for politics, I was headed straight for the public limelight. I again resolved to devote all my spare time to research.

Was it possible for me to abide by this decision and to ignore the urgent pleas of those who had few others to whom to turn?

CHAPTER TEN

A MIGHTY WEAPON

In spite of the vast accumulation of data in the scientific literature indicting fluoridation, news releases in the nation's press almost invariably lauded the project. Week after week new glowing reports about fluoridation issued from Grand Rapids, Mich., from Washington, D. C., or from the Chicago American Dental Association headquarters, persistently extolling the 65 per cent reduction in tooth decay and emphasizing its absolute safety.

In the fall of 1953 my wife made an effort to comment on one of these releases in a letter to the Detroit *News*.

The editor of the *News*, Mr. Harry Wade, was a friend of ours. She felt, if anyone, he would know that her statement had a solid basis. He would read it with an open mind and publish it among letters to the editor.

His answer was brief and decisive. He stated that both sides of the issue had already been thoroughly aired in the columns of the *News*.

We took no further action until about a year later when I telephoned Mr. Wade and pointed out to him that there has been no opportunity for rebuttal to any of the more recent promotional releases. His reply sounded reasonable:

"We report news items," he stated, "we are not a crusading newspaper. Should there be news events unfavorable to fluoridation we would publish them. If 100 physicians, for instance, were to openly oppose fluoridation, this would be newsworthy."

I offered to write an article or a letter for the Detroit *News* based solely on the research in which I was engaged.

"Aren't new data, with which the public is unfamiliar, news items", I inquired.

"This," Mr. Wade pointed out, "would place me in the category of a crusader."

Indeed, I found out later when a newsworthy event did take place, namely the meeting of the Eastern Dental Club at the Whittier Hotel, Mr. Allen Schoenfeld, Detroit *News* science writer, did report objectively about the meeting in his paper.*

On the other hand, a few months later, out of 112 Detroit physicians and dentists canvassed, eighty-three signed a petition requesting Gov. G. M. Williams to halt promotion of fluoridation in Michigan. This important news event was given little, if any, publicity in the Detroit metropolitan papers.

Nevertheless, I was grateful that Mr. Wade had at least displayed interest in and understanding of my position. He gave me some valuable suggestions on newspaper publicity and public relations, an area on which I had been completely uninformed. They served me in good stead in later years.

I shall never forget his advice: "In whatever you write try to attract your adversary! Don't antagonize him. Don't make enemies of those who hold him in high regard. Concentrate on the positive rather than attempt to negate his arguments."

Nevertheless, his newspaper, like many others in the nation, leaned heavily on information emanating from proponent sources. Perhaps this was due to sparsity of news events unfavorable to fluoridation, perhaps to improper handling of available material indicting fluoridation. Perhaps there were other reasons.

One thing was obvious: The usual sources of information on scientific data concerning medicine and dentistry were the Public Health Service, the American Dental Association and the American Medical Association. These organizations happened to be in the proponent camp.

* Detroit *News* 11/2/1954.

The opposition, on the other hand, was disorganized, without funds to obtain public relations counsels. Opponents were constantly being disparaged and presented to news editors as "unscientific," "emotional" people who lacked public spirit. Since the inception of fluoridation, this has been a major feature of the promotional campaign instigated by the American Dental Association.[178]

The rejection of her letter to the Detroit News emphasized to my wife the urgent need to obtain and disseminate factual data to counter the constant flow of promotional material. Some kind of a permanent news medium devoted to carefully documented, scientific information on fluoride would constitute a potent weapon for those opposing fluoridation in this never ending struggle. It would show the people in Seattle what was going on in New York City on the fluoridation front.

Because I was too much involved in my medical practice I could not devote any time to such a venture. Mrs. Waldbott had some background in scientific writing. She had assisted me in preparing many of my medical publications ever since we were married. Her main interests had been science, fine arts, antiques and of course the education of our two daughters. She had no training in or experience with newspaper work. She was unaware of how to write copy and compose pages. She had no idea how to distribute a newspaper nor had she any business experience. There was no money available, no talent that she could consult, no organization which could have assisted her. She knew of no one to hire.

In this dilemma she had a lucky break. At a banquet of the Michigan State Medical Society's annual meeting we happened to sit next to a news reporter, Russell Clanahan.

We discussed fluoridation. He decided to attend a staff meeting at the Grosse Pointe Cottage Hospital where I had been invited to present my first case of poisoning from drinking Highland Park fluoridated water.

He must have been impressed with my presentation. He was surprised that no information of this kind had reached his newspaper. He displayed a personal interest in assisting us. He even proposed writing the story of fluoridation for a popular magazine, and spent several months examining documents which my wife had thus far accumulated. I had already approached several nationally circulated magazines about publishing an article written by myself and discovered that all without exception were strongly in favor of fluoridation; that they would under no circumstances consider publishing anything unfavorable to it. Mr. Clanahan's article had to be shelved.

Sensing that there was virtually an iron curtain on this subject, Mr. Clanahan proposed the issuance of a monthly newspaper on fluoridation as a public service, to deal mainly with facts not easily accessible through the conventional channels of communication. Mr. Clanahan had many thoughts about how to make the paper pay for itself.

While pondering these matters, he told us that he was about to sever his present connections. He offered his services as editor of the newspaper. With two extra rooms in my clinic, one could be used as his office, the other might be set aside for my wife. His salary demands were modest. For the first few months my wife decided to underwrite his salary. He was to introduce her into the secrets of becoming a co-editor. In case the income did not defray his expenses, she might eventually have to take over as editor.

There were many unsolved questions. They remained unsolved throughout the eight years of her editorship:

Without accepting advertisements how could the newspaper ever pay for itself? How would my patients react to a newspaper office located in rooms of my clinic? Would

my wife's name as editor prejudice physicians against me? By this time the word fluoridation had become a red flag to many physicians as well as to lay persons.

These questions did not concern me too much. My practice was sufficiently secure to survive the loss of a substantial portion. I did not anticipate, however, that the identification of the newspaper with my office was to make me a target of abuse by some of my best friends in the medical profession.

Mr. Clanahan was helpful, indeed. He selected the name, *National Fluoridation News,* and the paper's format. He arranged for the masthead and other details. After shopping around he found an inexpensive printer who turned out to be most cooperative and loyal to the cause.

The question of the editor's salary constituted a major problem. It soon became obvious that income from subscriptions was insufficient to defray even the printing costs, much less the editor's salary and the distribution. Numerous copies of each issue were given free of charge to interested persons. This was one of the purposes for which *NFN* was established.

After two months Mr. Clanahan accepted a better paying position. It now became incumbent upon my wife singlehanded to be editor, writer, composer, proofreader, gatherer of news, librarian and even distributor of *NFN.*

The beginning was rough. Not the least of her handicaps was her lack of journalistic experience. Gradually here and there she picked up bits of knowledge.

One of my patients, an editor of a neighborhood paper, was kind enough to give her some hints on how to write an article:

"The key to the article should be contained in the first sentence. There should be a brief summary at the end."

At a medical meeting, a reporter whom we met instructed Mrs. Waldbott how to word the headlines and what type to use. She showed her how to compose a page, to select

heavy captions for the top, lighter ones toward the bottom.

On a trip to Europe, a young journalism student whom we met on the ship advised her about what to include and what to omit from an article.

A patient who had just completed a course in journalism at Cass Technical High School wrote a constructive three-page critique of one of the issues of *NFN*. "Don't abbreviate words in the headlines," she advised. "Include cartoons for relief from solid type; balance dark type with light type."

An executive in the public relations office of one of the Detroit automobile manufacturers suggested the use of better paper and of illustrations. My wife could not follow his suggestions because she was already overextending herself financially.

A friend volunteered to set up a card index which made it possible to locate data from back issues.

Throughout her editorship she was able to support all her statements with documentary evidence. Nearly every article contained the references to original sources. When errors were brought to her attention on this complicated subject, they were promptly corrected in the following issue. Typographical errors were kept to a minimum, a remarkable record in view of the fact that the editor had to do all her own proofreading.

The one thing the paper lacked was a distribution system. The editor was too busy with her other manifold duties to give any thought to this aspect of her job or to look for financial assistance. Every month the newspaper faced a deficit of several hundred dollars, which she had to defray from her own pocket.

In addition to current news items *NFN* published abstracts and critiques of research studies regardless of whether or not they favored the cause. To this day they constitute a reliable source of scientific information.

To give some brief examples:

NFN reviewed a 1950 U.S.P.H. survey in American Samoa by U.S.N. Capt. F. L. Losee, which reported that healthy teeth occur where there is little or no fluoride in drinking water.[84] *NFN* summarized animal experiments in the *Journal of Nutrition,* 1954, by Drs. J. H. Shaw, biochemist at Harvard School of Dental Medicine, and R. F. Sognnaes, which demonstrated that minerals other than fluoride "are major factors in determining the difference between sound and carious teeth" in rats.[179]

Other items published by *NFN*: Prof. A. Kantorowicz of Honef, Germany, surveyed communities in North Rhine-Westphalia. He concluded that the incidence of tooth decay is not related to fluoride content of drinking water.[57]

Dr. J. C. Muhler, Prof. at University of Indiana, Bloomington, found that less fluoride is retained in the body if calcium, magnesium, iron and phosphate are added at the same time as fluoride to drinking water of rats.[180] These four minerals present in water would, therefore, profoundly affect the action of fluoride.

When in Napier, New Zealand, with little or no fluoride in water (0.13 ppm) children's teeth had less decay than in artificially fluoridated Hastings, molybdenum[13] was determined to be mainly responsible.

Other items in *NFN* dealt with reports of damage to plumbing and heating equipment due to fluoridated water:

In Miami, Florida, by February, 1957, a water heater company had replaced under warranty approximately 5000 water heaters due to leakage since fluoridation started in 1951,* compared to about 100 replacements during the four years prior to 1951. After establishing that the quality of the steel was unchanged, and after ruling out other possible causes, the company could not but attribute the corrosion to fluoride added to drinking water.

A Toronto manufacturer of hot water tanks, in business

* L. H. Phillip, Pres. Miami Water Heater Co. to Dr. Marvin Smith, Miami, 2/22/57.

for over 40 years, had routinely given a 20-year guarantee with every boiler. Toward the end of 1962 he expressed his intention to discontinue sales to Brantford (fluoridated since 1945) because 90 per cent of all corrosion instances brought to his attention were connected with range boilers installed in Brantford and neighboring areas. Previously, boiler failures due to corrosion had always been negligible from even the hardest water.*

In Riverhead, N. Y., fluoridation started in 1954 according to a letter Oct. 24, 1964, by J. P. Riesdorph, the Water District Superintendent. By 1959, corrosion problems had become so severe that it was impossible to wash clothes clean. Twice, when fluoridation was discontinued, the trouble disappeared only to return when fluoride was again added to the water. Every conceivable means was tried to no avail to correct the trouble while retaining fluoridation. Fluoridation was finally terminated in March, 1963.

NFN revealed how the P.H.S. attempted to discredit other reports of damage to plumbing. They would have constituted a serious setback to fluoridation promotion had they been widely publicized.

Other articles disclosed some of the shortcomings in the current proponent literature:

NFN demonstrated that the St. Louis Medical Society's Report on "Water Fluoridation,"[182] February, 1954, had ignored important studies unfavorable to fluoridation; it had quoted exclusively from the available literature advocating it. Much space in this report was devoted to disparagement of leading scientists as well as conscientious public-spirited lay persons, in order to neutralize the impact of their evidence.

As no research had been carried out to prove fluoridation safe, the authors of the report relied upon negative evidence. They quoted health officials as follows: "We have not observed. . ."; "There is nothing in our statistics to indicate. . ."; "I am not aware. . .." They claimed that there was no need for an investigation of possible harm: To look "for trouble where none was to be anticipated," is "a luxury" (page 127), they maintained.

* Letter by H. A. Morton, Coulter Copper and Brass Co., Ltd. to Mrs. Ann Burton, Toronto, 11/14/62. The damage was attributed to fluoridated water, not to excessive water pressure as subsequently claimed by the company.

NFN pointed out that many of the sixty-seven references in this report's bibliography, consisted of personal communications—that is, personal opinions or undocumented arbitrary statements, mostly by health officials.

For example, *NFN* attempted to obtain substantiation for the claim that fluoride provided on an individual basis through tablets, milk, salt or other means would have profound disadvantages peculiar to each mode of administration. After much time, extensive correspondence and perseverance, a memorandum by Dr. R. E. Shank[188] of Washington University, Dept. of Preventive Medicine and Public Health, was finally unearthed. It merely expressed Dr. Shank's personal opinion without providing any research in substantiation of his assertion.

A significant document which would not otherwise have come to the public's attention was reported in detail by *NFN*, May, 1961. It was issued undated by the Pennsylvania Dept. of Health. It instructed health officials and other promoters "How to Appeal to the People on Fluoridation."[184] It showed that promotion of fluoridation is not based on scientific facts, but depends largely upon public relations experts to mold public opinion. It advocated the use of every conceivable means which would achieve the desired ends.

Designated *Guide* #5, it gave the following advice: Establish your case upon endorsements! Ridicule opponents! Appeal to bandwagoning, emotion and even to religious faith! Persuade city fathers and mayors! Prevent the issue from coming to a vote! Avoid open debate! It implied that

sound scientific evidence unfavorable to fluoridation should be disregarded.

These methods, which originated on the national level at the Fourth Annual Conference[69] in Washington, D. C., 1951, have been carried out to the letter in most towns and communities throughout the U.S.A. wherever fluoridation has become an issue.

Many specific instances of how these devices were implemented were presented in *NFN*:

In Kansas City an ordinance to fluoridate the water was before City Council.* To avoid publicity–the ordinance would have required alerting the public before action could have been taken–the City Council passed a surprise resolution on 9/22/61 which they considered "administrative," not subject to a vote.

Subsequently more than 18,000 signatures–twice the number required by law–were submitted requesting a referendum.** Yet the Council denied the vote. The water was fluoridated. Kansas City citizens were obliged to take their case all the way to Missouri's Supreme Court. It held that fluoridation is "legislative." Because it represents a new policy, it is subject to a referendum. The court ordered the city to stop fluoridation or submit the question to a vote of the people.*** On 8/4/64 Kansas City citizens voted 38,826 versus 33,194 to abandon fluoridation after two years' operation.

P. H. S. reporting the "Status of Fluoridation" in the U. S. A. 1954-56[186] estimated that in only 5 per cent of fluoridated cities had the people been permitted to signify their wishes by public vote.

Chicago's City Council had adopted its controversial fluoridation ordinance 37 to 8 on 6/17/54. On December 23 they voted 43 to 2 to ask the state's authorization of a public vote. The bill to permit a referendum passed both houses of the state legislature.* However, on July 18, 1955, Illinois Governor Wm. G. Stratton vetoed it.

* Kansas City *Star* 9/23/61.
** Kansas City *Star* 9/9/63.
*** Kansas City *Times* 1/15/64.

In explanation the Governor stated that the question was "highly controversial" and that men trained in the health profession are "not in full agreement."

"A referendum cannot establish or destroy a scientific fact," he added, according to the Chicago *Daily News*, July 18, 1955. The Governor's logical answer would have been to postpone action regarding fluoridation until scientific research had either proved it safe or not safe.

According to the Washington, D.C., *Daily News*, 11/23/57, the nation's capital was fluoridated in 1952 without legislative authority, at the request of former Water Commissioner, J. F. Donahue. He had been urged by the Health Dept. to adopt it. Four little words were tacked onto an appropriation bill for the Washington Aqueduct, namely "and fluoridation of water." Nobody caught the "point of order." This was accomplished in a great hurry a few days before a well-qualified congressional committee recommended "GO SLOW" regarding addition of fluoride to water supplies because of too many unanswered questions (see details in Chapter I).

In La Grange, Illinois, on July 13, 1959, the village board voted 5 to 1 to disregard a petition signed by 1203 citizens who requested repeal of the board's resolution to fluoridate water supplies.** The signatures represented more citizens than had voted in the previous election. When the vote eventually took place on 4/9/60, city officials spent $1,000 of tax money for disseminating promotional literature. The resulting vote favored fluoridation.

Shrewsbury, Mass., had been fluoridated for thirteen years. In an attempt to abandon it a courageous dentist, Gerald Racine, D.M.D., mailed a letter to each resident call-

* Chicago *Daily News* 7/18/55.
** *Suburban Life*, LaGrange Park, Ill., 7/16/59.

ing attention to mottled teeth in the town which he had observed among his patients. He stood his ground in spite of numerous abusive phone calls and harassment by his colleagues who urged him to retract his letter.

One hour after a U.P.I. news release, broadcast over WBZ, alleged that Dr. Racine had rescinded his letter, he declared in a taped interview with broadcaster Streeter Stuart that he had done no such thing. Nevertheless, promoters employed a telephone campaign and paid radio ads on Worcester stations asserting that Dr. Racine's letter was a hoax. The Worcester *Telegram* also disseminated the false release. The truth, when subsequently published, came too late to influence the vote. The opponents lost. Shrewsbury's water supply remained fluoridated.

In Atlantic City, N. J., citizens had already rejected fluoridation 2 to 1 by public vote in 1954. Through the efforts of local dentists, City Commissioners were persuaded to disregard the people's mandate. On 12/7/56 they passed an ordinance to introduce fluoridation without a vote and without adequate advance notice. "Commissioner R. S. Jackson said that fluoridation had been started without public announcement to head off unfounded complaints," the Philadelphia *Inquirer* reported on April 1, 1958, under the headline "Fluorine Sneaked into Water."

Until 1964 San Francisco was the only large U. S. fluoridated city where citizens had had a chance to vote on this issue. In 1952, 114,000 voted for fluoridation, 87,000 against it. However, due to the ambiguous wording of the ballot most citizens did not know what the vote was about. The ballot read:

> "Shall the City and County of San Francisco add chemicals to prevent or arrest dental decay to the water furnished the people of San Francisco by the San Francisco Water Department?"[186]

Neither the word fluoride nor fluoridation was used.

NFN reported how in Binghamton, N. Y., Cincinnati, O. and Vancouver, B.C., physicians' names were included in newspaper advertisements as advocating fluoridation, some of whom were deceased, some had moved away, some had told their patients that they did not favor fluoridation. Subsequently several physicians protested publicly that they had never given permission for their names to be so used.

Dover Foxcroft, Maine, has established a remarkable record. Between 1954 and 1962 fluoridation has been defeated six times; five times by secret ballot, once by show of hands at a Town Meeting.*

In numerous U.S. cities such as Ottawa, Ill.[a], Mason City, Ia.[a], Fort Walton Beach, Fla.[b], Riverside, Calif.[c], Fort Worth[d], Houston[e] and Dallas[f], Texas, fluoridation has been promoted by dentists where the water already contained the recommended amount of fluoride. Dr. L. G. Matthews, the promoting dentist in Chester, Va., announced that "Tooth decay among Chester children is about as bad as anywhere else." Subsequently he found out, to his embarrassment, that the well water contained 2 ppm fluoride naturally[g].

Although Fort Worth city water already contained 0.1 to 1.8 ppm according to the P. H. S. publication *Natural Fluoride Waters*,[89] its Council had voted for fluoridation in August, 1953. Later they reversed their position. Dallas and Houston have both, in the past, been subjected to fluoridation promotion. Houston has been cited[187] as one of the big cities adding fluoride to drinking water supplies. Now all three, Fort Worth, Dallas and Houston, are named in a

* Piscataquis *Observer*, Dover-Foxcroft, Maine, 3/5/62.
a. Highland Park *News*, Des Moines, Ia. 8/11/55 — b. Playground *News*, Fort Walton, Fla. 1/10/52 and 10/7/54 — c. Los Angeles *Times* 8/31/53 — d. Fort Worth *Star Telegram* 3/3/54 — e. Springfield (Mass.) *Union* 4/1/54 — f. Dallas *Morning News* 2/12/59 and 2/13/59 — g. Syracuse, N. Y. *Herald Journal* 5/15/52.

nationwide P.H.S. release of June, 1963,* as cities which have "natural fluoridation." Nevertheless, in Fort Worth, dentists again started promoting fluoridation in Sept., 1964.**

In Mason City, Iowa, the promotion suddenly subsided when Dr. Chas. Henshaw, State Dental Health Director, reported in the Des Moines *Register*, on 2/19/54, that mottled teeth were already apparent among school children. The water contained 0.5 to 0.6 ppm fluoride; some wells which came into use during the summer showed as much as 3.5 ppm.

Mt. Pleasant, Michigan, was cited in the *Saginaw News* July 3, 1959, by the Michigan Dept. of Health as one of fifty Michigan cities whose water supply contained "enough natural fluoride" "to prevent tooth decay." Yet, artificial fluoridation had already been put into operation in 1957.

Confirmation of such experiences by health officials is found on page 65 of the minutes of the Fourth Annual Conference.[69] F. J. Maier, Senior Sanitary Engineer, Division of Public Health stated: "There have been several instances where groups have promoted fluoridation of the local water supply only to find that the supply already contained the optimum amount." Obviously in none of these cities was there any indication that the natural fluoride content of the water had made children's teeth sounder than where it was lacking in water.

In New Kensington, Pa., the water contained 0.9 ppm. Health officials insisted upon adding 0.1 ppm to bring the fluoride level to 1 ppm,*** as though the exact concentration could be maintained at all times within 0.1 ppm.

The practice of introducing fluoridation without citizens' knowledge originated with the director of the Newburgh experiment, Dr. Ast, who advised in the 1943 *Journal of the*

* Kenosha (Wisc.) *News* 6/3/64
** Fort Worth *Star Telegram* 9/20/64
*** New Kensington, Pa. *Daily Dispatch* 9/23/57.

American Water Works Association, Vol. 35, page 1196, avoidance of public discussion before the plan had been "sold to key citizens." Whenever fluoridation is freely discussed, citizens are likely to learn both sides of the question and reject it.

According to the Royal Oak *Tribune*, Jan. 21, 1959, Dr. Fred Wertheimer, Michigan State Dental Health Director, boasted that seven communities had initiated fluoridation during the past year. He said the names of these communities are "top secret" as far as the department is concerned. Council President James A. Otto of Springfield, Minn. called fluoridation of Redwood Falls' water supply "Council's best kept secret." "Not even wives of council members knew. At least mine didn't," he commented for the local *Advance Press*, July 3, 1959.

A widely used promotional story has been circulated about Akron, O.; San Francisco, Calif.; Newburgh and Elmira, N. Y.; Charlotte, N. C.; E. Lansing, Mich.; Brantford, Ont., and many other places. It goes like this: Citizens swamped city hall with complaints of illness due to drinking fluoridated water when, to everyone's dismay, it was discovered that somehow fluoridation had not, as yet, been put into operation.

Since the same events are alleged to have occurred in many cities and since, according to the story, after introduction of fluoridation in the above-named cities no further complaints were registered, the veracity of the story is doubtful.

NFN has written to numerous municipalities, to newspapers and radio stations for the name and address of at least one person who had so complained. No substantiation has ever been forthcoming. Therefore, it appears that the story was fabricated for the express purpose of discrediting, in advance, illness likely to occur in some citizens from drinking fluoridated water.

NFN has reported instances of air and river contamina-

tion by fluoride. Waste affluents from superphosphate plants in Florida's Peace River basin caused the fluoride content of the river water to rise to 46 ppm during 1957 through 1961, thus seriously endangering Arcadia's drinking water supply.*

In The Dalles, Oregon, fruit crops and orchards have been damaged by fluoride fumes from a neighboring aluminum factory.[188] Nevertheless, citizens of The Dalles, who were already inhaling excess fluoride from contaminated air, are likewise obliged to drink fluoridated water. Tampa citizens, who are constantly exposed to fluoride fumes from nearby phosphate fertilizer factories, have been repeatedly subjected to fluoridation promotion since 1951.** On 11/6/62 they rejected fluoridation overwhelmingly by referendum.

Among early subscribers to the *NFN* were the American Dental Association and public health agencies in Switzerland and Sweden. At first the editor was pleased that these organizations were apparently interested in learning from *NFN* facts with which they were not familiar. She dared to hope that this paper would make a dent in their promotional efforts. It did not take long for her to learn their purpose in subscribing. They aimed to counter the facts which *NFN* was disseminating.

Changing Times is outstanding among nationally circulated magazines which have indulged in attacks against *NFN*. In November, 1961, it published a vitriolic article without permitting an opportunity for clarification of the issues involved.

It is not my purpose to reflect unfavorably on the editorship of any magazine. Their sources of information on dental health are the A.D.A. and the P.H.S., the two most

* Tampa *Tribune* 9/15/61.
** Tampa *Tribune* 1/5/56; 10/19/62, Tampa *Times* 3/7/56; 9/27/61.

reliable organizations on dental or medical subjects other than fluoridation. Magazine editors publish what they believe is the truth.

Unwarranted abuse was heaped upon *NFN* by Sweden's key promoting scientist, Dr. Ingve Ericcson, Professor at the University of Stockholm's School of Dentistry. He is recipient of large P.H.S. research grants. He became an exponent of fluoridation while working at the University of Minnesota in the laboratory of Dr. W. D. Armstrong, one of the most vigorous U. S. promoters of fluoridation.

At a medical meeting on Nov. 4, 1958, Prof. Ericcson made the following statement which was published November 26, 1958, in *Nordisk Medicine*, the official journal of the Swedish Medical Society:

"This paper *NFN* is in fact non-profit and idealistic to such an extent that it pays one cent a word for anti-fluoridation articles."

The background of this statement is worth recalling: A newspaper writer had answered an advertisement to write articles for *NFN* during the interim between Mr. Clanahan's and my wife's editorship. Given some material, she was asked to compose, on a trial basis, a few short articles each two to three inches long. Should she fail to qualify, a fee totaling $20 to $25 was stipulated. Because her writing was unsatisfactory, she was not hired. Subsequently my wife, to her consternation, received her bill amounting to several hundred dollars. Lacking a written agreement, in order to dismiss this unpleasant experience from her mind as promptly as possible, she had no choice but to pay it.

Now, three years later, in 1958, Prof. Ericcson's reminder in *Nordisk Medicine* added insult to injury by implying that my wife could afford to pay thousands of dollars for just one issue of *NFN*. It is noteworthy that such an incident was considered of interest to a medical society in a far distant land.

By 1962 the expense had depleted much of her personal savings and had become so burdensome that she was no longer able to carry on. On Jan. 1, 1963, she turned over the subscription list and the running of the paper to Ethel Fabian, the new editor and publisher, and to the N.Y. City Committee for Protection of Our Water Supply.

Ironically, the last issue that she edited dealt with the Detroit City Council's vote to fluoridate the metropolitan water supplies. It showed how several new City Councilmen were elected with the support of fluoridation promoters; how an Asst. Surgeon General of the P.H.S.* and other top advocates came to Detroit from Washington, D.C., to sell city officials on the idea of fluoridation without permitting any opportunity for the opponent view to be heard; how, subsequently, representatives of all news media, press, radio and TV, were invited by the local dental society to an elaborate luncheon** where, again, only the pro side was presented, instead of both sides on an equal basis. A lay person with no scientific background was asked to present the case against fluoridation. He was highly emotional. Through his incoherent statements, he became the laughing-stock of all present. He was widely quoted by the local press and televised on major networks as though he were a true representative of the opposition. This kind of a public image of the opposition is created by the proponents for promotional purposes. Its pattern prevails throughout the country.

In many U.S. cities, *NFN*, furnished free of charge, was the principal weapon by means of which fluoridation was defeated. My wife's files contain numerous letters of gratitude from every corner of the globe for her assistance in this great struggle. Included are commendations by dentists, physicians, scientists, editors. Her most cherished letters were written by persons who had suffered illness from drinking fluoridated water and were grateful for her help in getting fluoridation discontinued in their cities.

* Detroit *News* 3/6/62.
** Detroit *Free Press* 6/28/62.

Has Mrs. Waldbott accomplished what she had set out to do? Was the weapon powerful enough to make a permanent dent in this never ending struggle?

This much is true: *NFN* has unearthed a vast array of facts which otherwise would never have come to light. It has provided the answer to many unsolved questions. The facts, disclosed by this paper, have become a part of the permanent collection of several libraries. They constitute an enduring record of events from 1955 through 1962. Only the future will tell if and to what extent Mrs. Waldbott was successful in disseminating the truth.

CHAPTER ELEVEN

PROGRESS AND ROADBLOCKS

On July 9, 1954, Dr. Austin Smith, then editor of the *Journal* of the American Medical Association, wrote to me that original data were needed more than anything else in fluoride research. He could have further qualified this statement: It is clinical research that is sorely needed, observations on an individual's response to fluoride, both in health and disease. How does a patient with diabetes, with arthritis, with kidney disease or with allergy react to fluoride, one of the most active chemicals in existence?

I heeded Dr. Smith's advice. Shortly after he made this suggestion to me I began to accumulate carefully documented original data. Some have been published[34,62]; some are being processed for publication; some, as is so often the case in clinical research, could not be completed.

An opportunity for studies offered itself on September 11, 1962, when the city of Windsor across the river from Detroit began fluoridation without the knowledge of citizens. Two weeks later the press announced the event to the public.

Mrs. M. H., age fifty-seven, a nurse, and Mrs. E. K., age thirty-eight, had been in a habit of drinking one to two glasses of water before breakfast. For some unknown reason, they suddenly experienced abdominal cramps and vomiting immediately after their customary morning drink. During the course of the day, they developed headaches, pains in the lower spine, numbness and pains in arms and

legs. Formerly they had never had such discomfort. At the time they were not aware that Windsor's water was being fluoridated.

Mrs. H.'s physician, Dr. F. S., at first suspected a stomach ailment. His treatment was of no avail. After several weeks of careful observation he advised her to discontinue drinking fluoridated water. He considered it the source of her trouble, yet he requested her not to disclose his diagnosis to anyone lest it jeopardize his position in the eyes of some of his colleagues, especially Windsor's Medical Officer of Health. Mrs. K. related the illness to the water on her own.

Both patients recovered promptly upon eliminating fluoridated water.

Mr. D. H., age fifty-nine, and Mrs. I. C. W., age fifty-seven, presented a similar story. In addition to the stomach and intestinal disorders, they noted a slowly progressive deterioration of their mental acuity: They stated that they became forgetful and lost their power to concentrate.

A few observations of this kind would be of little significance. It can rightly be said that more data are needed to establish the relationship of such an illness with fluoride. However, these observations become highly significant when numerous patients from many fluoridated cities have essentially the same experience and when this disease correlates with the symptoms of experimental fluoride intoxication.

The following are cold facts:

The patients had no idea what had caused their illness. They did not even know that fluoride had been added to their town's drinking water. However, the onset of their illness, as determined later, coincided with the addition of fluoride to their water supply. The symptoms were, with minor variations, a combination of gastrointestinal, bladder and neuromuscular disturbances simulating a disease called hyperparathyroidism. The latter is due to a disturbed calcium-phosphorus metabolism. Some experienced

arthritic pains, some ulcers in the mouth and a tendency to hemorrhages. The symptoms gradually disappeared when the patients eliminated fluoridated water for drinking and cooking. In some individuals, recovery took place when they were away from home for extended periods, visiting in non-fluoridated cities. In other words, this otherwise chronic progressive disease cleared up without medication when, unbeknown to the patients, fluoridated water was avoided.

Nowadays when biochemical and laboratory tests are often being overemphasized by physicians, scientists require controlled data to prove the relationship of a new illness to its cause.

Several approaches were possible:

1. Extensive consultation with specialists to rule out other diseases.
2. Biochemical and laboratory data on patients in order to determine features characteristic of chronic fluoride poisoning.
3. Analysis of body tissue for fluoride.
4. Test doses of fluoride under controlled conditions using fluoride-free water for comparison.
5. The double blind test to remove all doubt that the illness could have been caused by any substance other than fluoride. Its technique was outlined to me, as follows, by the editor of the AMA *Journal* in a letter dated April 2, 1958:

> "One very obvious method for testing the validity of the diagnosis would be to place the patient on a fluoride-free water supply until the symptoms have subsided. Then, unbeknown to the patient (and to the physician), add 2.2 parts per million of sodium fluoride to the water."

2.2 ppm of sodium fluoride in water is equal to 1 ppm of fluoride, the concentration recommended for fluoridation, or about 1 to 1.5 mg a day.

In order to eliminate any chance of personal bias, I attempted to have Windsor physicians proceed with tests on the patients whom I had examined on December 17, 1962. Eight members of the Essex (Windsor) County Medical Society met at the home of one of their colleagues at which time I presented a review of my research on fluoride. I particularly emphasized the available diagnostic approach. In spite of intense interest in the subject and in my research, they hesitated to carry out some of the tests which I had recommended.

Because of the position taken by their Medical Officer of Health and because of strong feelings among some of their colleagues they wished to avoid conflict and the resultant publicity.

One of them did, however, arrange to carry out a double blind test on one of the nine cases:

The patient was a thirteen year old schoolgirl (C.D.) who developed increasingly severe migraine-like headaches starting in mid-September. Simultaneously, she had pains and numbness in arms and legs, and a distinct deterioration in her mental alertness. She became too ill to attend school. Because of her headaches, her eyes were checked by a specialist. A consultant neurologist ruled out the possibility of a brain tumor. A series of tests to determine whether the headaches were due to allergy were inconclusive.

On the advice of another patient who had been similarly afflicted, the child stopped drinking Windsor water. Her condition began to improve immediately. After ten days her symptoms had completely subsided. However, on Mondays and Thursdays the headaches recurred when she inadvertently quenched her thirst with Windsor tap water after gym classes. The recurrences were avoided when she carried her own drinking water to school. As a final proof that fluoride caused the illness, the disease was subsequently reproduced by a double-blind procedure performed under the guidance of the Windsor physician.

Everyone who has carried out research has experienced repeated disappointments and frustrations before achieving success. Close to his goal, roadblocks may appear which prevent him from carrying his work to its final conclusion.

The major obstacles to my work have been lack of cooperation by physicians and patients:

Most physicians are eager to assist. However, physicians are sharply divided in their views regarding fluoridation. Some of them are as emotional on this issue as lay persons. Contracting enemies among those who disagree, thus impairing their standing among some of their colleagues, could lead to curtailment of their practice, particularly if it depended upon work referred to them by other physicians.

Lack of cooperation by patients was the other great obstacle in my work.

Once a patient is cured of his disease, only an exceptionally idealistic person will willingly undergo the time-consuming and sometimes painful tests involved in reproducing the illness by the double-blind method for experimental purposes.

The following experiences illustrate such difficulties:

Mrs. C. A. B., age sixty-nine, another Windsor case, had a severe skin eruption on hands and face since mid-September. Like other halogens such as bromide and iodide, some fluoride is eliminated through the sweat glands of the skin. Under certain conditions, halogens induce skin eruptions, particularly allergic skin disease. Fluoride has recently been identified with erythema multiforme,[188a] a troublesome skin disease, in workers who inhaled fumes from fluoride-containing welding fluxes.*

Mrs. B.'s skin lesions disappeared when she eliminated Windsor's fluoridated water. They promptly recurred when

* One brand of welding flux analyzed recently contains 300,000 ppm or 30% of fluoride.

she resumed it two weeks later. When I examined her in Dec., 1962, she still had several residual areas on face and hands. Judging from the size of the remaining eruption, the patient must have suffered considerably. This time I planned a different approach. I hoped to secure a tiny specimen of the skin for a biopsy. Excess fluoride in this area of the skin would indicate that it was responsible for the lesion. I had already obtained specimens from several other patients which were to serve as "controls." The patient agreed to the plan: She was to resume drinking Windsor water. The moment the eruption re-appeared she was to see a surgeon for removal of the tiny specimen and of another piece of healthy skin as an additional control.

Just prior to the date decided upon she phoned to tell me that she could not go through with the plan. She did not mind the biopsy, but she had suffered so much during her illness that she could not face the ordeal of deliberately bringing about a recurrence.

Other patients had been so thoroughly convinced by their dentists of the absolute safety of fluoridation that they vigorously rejected even the suggestion that it could cause harm.

Miss M. L., for instance, who had been under my care for some time for an allergic disease, developed a progressive, generalized arthritis soon after fluoridation was instituted in Windsor. The disease caused much pain and disability to this young, attractive woman.

Miss L. ignored my suggestion that she eliminate fluoridated water temporarily, on a trial basis. Instead, her internist administered large doses of a cortisone drug, the conventional treatment for arthritis. This drug caused her to gain weight due to water retention in her system. She developed the characteristic "moon face." The joint disease, however, failed to respond. In despair she heeded my advice. The arthritis began to improve and gradually sub-

sided. When I requested her to undergo substantiating tests by resuming fluoridated water, she feared a recurrence of her painful ordeal. She refused.

Frustrating, too, was my experience with a nineteen year old Ann Arbor student who suffered from retinitis, a serious eye disease. The eye specialist called me in consultation to determine whether or not allergy was involved. My examination and tests ruled out this possibility. The condition had started shortly after the young man began drinking Ann Arbor, Mich., fluoridated water. Two British scientists, Drs. Sorsby and Harding,[188] had produced retinitis experimentally in rabbits by sodium fluoride. I had encountered retinitis in three well substantiated cases of poisoning from fluoridated water.* This stimulated my interest in the case.

I recommended urinary and blood determinations for fluoride as an initial test. The patient had read so many news releases claiming fluoride to be a harmless "nutrient" that he brushed aside my suggestion for a follow-up along these lines.

These were but a few of the many obstacles in gathering data on individual patients. Nevertheless, evidence was eventually obtained which unequivocally established serious harm from drinking fluoridated water.

Among the numerous patients encountered with poisoning from fluoridated water, at least fifteen were thoroughly studied.

A most striking case is that of Mrs. W. E. A., age sixty-two, residing in a non-fluoridated town. She developed the disease repeatedly on trips to fluoridated Washington, D.C., and Richmond, Va. At the time she had never heard of fluoridation. Always, within a few days after her return

* In the *British Medical Journal* of Aug. 8, 1964, the same disease has been attributed to fluoride by two British scientists, Drs. Geall and Beilin. A 55-year old man who was given 20 mg of sodium fluoride three times a day for 6 weeks in treatment of osteoporosis became permanently blind in one eye.

home, her illness began to clear up. This made her suspect that something in the water might be the source of her trouble. Upon inquiry, she learned that both cities were adding fluoride to the water supplies.

After she had completely recovered, the illness recurred upon using fluoridated toothpaste. Another time, a tranquilizer, trifluoroperazine, prescribed by her physician, precipitated the same disease. It soon became obvious to her physician that fluoride in the tranquilizer was responsible.

She had not been aware that the toothpaste, the tranquilizer, or the water in Washington, D. C., and Richmond, Va., contained fluoride. Therefore, her illness could not have been imaginary.

After she had regained her health, she received an intradermal (into the skin) injection of fluoride equivalent to the daily amount recommended for children's teeth. She was not informed, in advance, of the nature of the test. Within one-half hour she developed excruciating pains in the abdomen, diarrhea, and allergic nasal congestion, the same group of symptoms from which she had suffered on previous occasions from fluoridated water, fluoride toothpaste and the fluoride-containing tranquilizer. Subsequently double-blind tests were carried out by her own physician, Dr. C. D. M. of Memphis, Tenn., who again confirmed that fluoride was responsible for the disease. During one of these procedures, following use of the fluoride-containing tranquilizer, she became so severely ill that Dr. M. decided to refrain from further testing.

A former professor at the University of Florida, in Gainesville, Mr. F.L.P., age sixty-one, consulted me upon returning from a visit to Florida about a disease which had baffled his physicians. He had excruciating pains in the head and arthritis in the lower spine, and certain visual disturbances. He had recently become suspicious that something harmful in drinking water might be responsible. After he had moved from Gainesville, Florida, to Detroit, he had gradually re-

covered without treatment. Five years later, in 1956, when he returned to Gainesville for a brief visit, the disease promptly recurred. More than ever convinced that something in the Florida city's water was the culprit, he learned upon inquiry that Gainesville water had been fluoridated, whereas Detroit's water supply contained only 0.1 ppm of fluoride naturally. He underwent extensive clinical tests and blind studies. Consultant physicians ruled out other diseases. They felt that fluoridated water had, indeed, caused the illness.

After complete recovery he moved back to Gainesville. He remained in good health as long as he used distilled water for drinking and cooking. Within two days of attaching to his faucet a filter which was reputed to remove fluoride from tap water, his illness recurred. Its severity gradually increased. Analysis of the filtered water for fluoride showed that it contained 1.8 ppm on one day, 1.2 on another.

Once I had become acquainted with this disease, I encountered additional cases presenting a combination of gastric and intestinal disorders with characteristic neuromuscular and arthritic manifestations, often associated with lower urinary tract disturbances and skin eruptions.

Whereas these symptoms occur individually in many other diseases, their combination is not frequently seen. Nevertheless, additional criteria to identify this disease were needed, especially laboratory and biochemical data.

In 1956, I reported in *Acta Medica Scandinavica*[189] a thoroughly documented case of beginning rheumatoid arthritis in a 43 year old man, Mr. R. R., from Bloomfield Hills, a Detroit suburb, where fluoride occurred naturally in water at a concentration of 0.8 ppm.* He eliminated about ten times as much fluoride in his urine as is considered normal. Simultaneously, he lost through his urine

* More recently, Dr. Rich and co-workers of the University of Washington noted arthritis due to small doses of fluoride.[190]

an excess of calcium, a vital mineral necessary for life. His water source, a private well, contained fluoride naturally at 0.8 ppm. When he stopped consuming this water, the calcium loss and the arthritis ceased gradually in proportion to the decline of fluoride in his urinary specimen. After he completely recovered, the disease was reproduced by a double blind method:

He received three identical bottles of water labeled #1, #2 and #3. To one of the bottles enough fluoride had been added to provide 1 mg in one teaspoonful. This is the daily dose recommended for dental decay prevention. Only the druggist, neither the patient nor I, knew which one of the three bottles contained the fluoride. He took one teaspoonful daily from bottle #1 with a glass of distilled water the first week, from bottle #2 the second week and from bottle #3 the third week. Although fluoride is colorless, tasteless and odorless, he promptly discerned which bottle contained the fluoride because his arthritic pains recurred.

This test, called double blind because neither the patient nor the physician knows which bottle contains fluoride, was utilized in dealing with all subsequent patients. It unequivocally proved that fluoride and no other substance caused the illness and that it was not imaginary.

Another approach to the study of fluoride's effect on the human body was the analysis of vital organs for their fluoride content. An organ which contains excessive amounts of fluoride is likely to be harmed by it. Here, too, my preliminary experiences were laborious, costly and—disappointing. With persistence, however, I eventually obtained significant results.

My first experience of this kind concerned Mr. R.A.H., a thirty-five year-old engineer. He had been exposed to inhalation of beryllium in his work with fluorescent lamps. In January, 1944, he was transferred to Fort Wayne, Ind., where fluoridation was initiated on July 31, 1951.

He expired on June 10, 1953, from a wasting disease

with lung and gastric disorders, weight loss and visual disturbances.

Subsequently the family consulted me in order to learn whether contact with beryllium combined with imbibing fluoridated water could have caused his illness. Beryllium fluoride, an extremely poisonous substance, might have formed in the system and produced a progressive disease. Beryllium poisoning may not become manifest for weeks and months after exposure to the poison has ceased.

After studying the autopsy record at Fort Wayne and following conferences with the examining physicians, I submitted some of the lung sections to a nationally known expert on beryllium, Dr. G. W. Schepers, then at Saranac Lake, N. Y., Laboratory, for his opinion. He found a lung tumor identical with those which he had produced in rabbits with beryllium fluoride.[191]

The family decided to have the body exhumed so that some of the organs could be analyzed for fluoride and beryllium. Because neither one was found in excess, I concluded that neither fluoride nor beryllium had accounted for this patient's death. Not until 1963 did I learn that the absence of beryllium in tissue of organs does not exclude the possibility of poisoning.[192] With increasing knowledge on the subject, I now realize that I should not have disregarded the diagnosis of chronic beryllium fluoride poisoning merely because his organs no longer contained fluoride or beryllium. Indeed, it is most likely that poisoning by beryllium fluoride was the cause of death because of the characteristic tumor in the lungs.

On October 11, 1956, I was consulted by a lady from Racine, Wisconsin. Her husband (C.E.B.), age thirty-five, was dying in the Milwaukee Veterans' Hospital from a mysterious disease which had baffled physicians in this and two other hospitals where studies had been previously made. The disease involved many organs, particularly the stomach, the bowels and the neuromuscular system. It

resembled in many respects the disease in the study of which I had been engaged. I received transcripts of the complete records from the three hospitals, with the results of every investigation that had been carried out. I also obtained, through the hospital's cooperation, a urinary specimen for fluoride analysis. The patient expired a few weeks later, on January 22, 1957.

The autopsy disclosed amyloidosis, a rare disease, characterized by deposition in many organs of a chemical, called amyloid. The pathologist found several other abnormalities, namely, a malignant lung tumor, diseased parathyroid glands, a kidney disease and a terminal pneumonia.

After reviewing all available data with the pathologist and with clinicians at the Veterans' Hospital, I was satisfied that fluoridated water (1 ppm) which the patient had been consuming for six years was not primarily responsible for his death. However, it had a definite bearing on his illness for the following reasons:

1. There was considerable storage of fluoride in his system. By measuring the daily fluid consumption, it was shown that through water alone the patient had consumed about 3 milligrams of fluoride a day. Since his urine specimen contained only 1/10 of 1 mg, the major portion of the fluoride consumed must have been retained in the system.

2. The patient lost an unusually large amount of calcium in his daily urinary specimen, on one occasion as much as 1335 mg (up to 250 mg is normal).

3. The tumor in the lungs, probably the primary source of this patient's disease, contained 29.0 ppm of fluoride (29 mg per 1000 grams of tissue). This was far more than the fluoride levels usually encountered in lungs, which is less than 1 ppm. His bones contained only four times the amount of fluoride present in the tumor. Normally, bones store 300 and more times fluoride than other organs.

The excessive retention of fluoride in the system, its accumulation in the lungs and the disruption of the calcium balance pointed to fluoride as a contributing cause of death.

The high fluoride level in the lung cancer brought up a question which I was eager to explore:

Does cancer tissue contain more fluoride than healthy tissue? Should the answer be positive, it would be of interest to scientists who are trying to conquer cancer.

I discussed this problem with Dr. E. P. Pendergrass, the President of the American Cancer Society whom I met at a medical convention. At his suggestion I made an application to the Society for research funds. My project was clearly defined: I planned to obtain specimens of lung cancer from a local hospital.

As in other large hospitals, there were no facilities to carry out fluoride analyses. In the city of Detroit, where City Councilmen have voted to fluoridate the water supplies, only two laboratories are known to me which carry out fluoride determinations on whose accuracy I could rely. However, both are closely linked with a fluoride-promoting industry and the P.H.S. Most of my analyses had been carried out by George Kosel, an exceptionally well-qualified chemist of the Passaic, New Jersey, General Hospital. It was hoped that an initial pilot study on ten cancer patients and ten control cases without cancer would disclose whether or not this research warranted further studies on a larger scale. I estimated the cost for tissue analyses at about $10.00 each, and the total expense for the study at approximately $2,000. The American Cancer Society indicated to me that the money would be forthcoming. The pathologist of the hospital considered the project worthwhile and was eager to furnish the cancerous lungs.

However, there was a fly in the ointment: Several members of the hospital's medical executive staff committee were diehard proponents of fluoridation. They had already

committed themselves publicly to the thesis that fluoridation is absolutely safe.

At the committee's request, the hospital administrator informed me that my research did not meet with their approval because it would be partially carried out in a New Jersey hospital. Whether their decision was prompted by a belief that my project would not lead to tangible results or that the hospital might somehow be dragged into the fluoridation controversy or that my research might produce evidence in conflict with their own position, I never learned. I had solely requested the hospital to furnish ten specimens of cancerous lung tissue and ten non-cancerous specimens for comparative analysis.

The upshot of this incident was that I had to continue to defray all expenses for my research out of my own pocket.

I was able, however, to examine tissue from other organs in a series of cases through the cooperation of some of my colleagues. Some of these data have been published in my monograph, *Fluoride in Clinical Medicine*.[84] In specimens taken from diseased areas of the skin, fluoride levels ranged up to 300 ppm, whereas adjoining normal skin analyzed as a control contained very little fluoride, usually less than 1 ppm.

Moreover, biopsy specimens of ulcers of the mouth of unknown origin from five persons were analyzed for their fluoride content. In ulcer tissue from one of them, a welder, 6.08 ppm fluoride was found whereas in four other persons specimens of the lining of the mouth were fluoride-free. The welder's urinary fluoride level was high, namely 4.2 ppm (normal 0.1 to 0.3). Considerable fluoride was being eliminated for as long as three weeks after he had ceased to be exposed.*

Another project in which I was engaged was the exam-

* The fluoride content of fluxes, according to analysis of eight different brands, ranges from 0 to 300,000 ppm (30%).

ination of eye lenses for fluoride. They had been removed surgically because of cataracts. The lens tissue in 14 was free of fluoride, but in two specimens extraordinarily high fluoride levels were found, namely, 77.3 ppm and 176.0 ppm. Such unusually high values raise the question whether or not some cataracts are related to fluoride.

My interest in cataracts had been aroused by the study of a French scientist, Dr. R. Weekers,[193] who demonstrated in 1941 that in cattle and rabbits sodium fluoride interferes with the normal composition of the lens, especially its carbohydrate (sugar) metabolism.

In addition to having fluoride determinations made on cataract lenses, specimens of skin and lining of the mouth, I carried out a program of analyzing for fluoride, the major soft tissue organs in ten individuals. One of them, a patient from Highland Park, Michigan, Mr. W. B. D., forty-five years old, had died under mysterious circumstances in 1962. He had been under my observation from Feb. 19, 1959, to Oct., 1959. The diagnosis of poisoning from drinking fluoridated Highland Park water was unequivocally confirmed by a series of urinary fluoride determinations, by other laboratory studies, by consultation with leading Detroit specialists and, finally, by repeated double blind tests.

On Oct. 2, 1962, Mr. W. B. D. was found dead in bed. He had been free of symptoms since 1959 when, according to my advice, he began to use distilled fluoride-free water for drinking and cooking. However several weeks before his death he had started to use a filter which, he assumed, eliminated fluoride from his tap water. A check on this filter after his death, by a Detroit water engineer, revealed that the filter was ineffective. It had not removed all the fluoride. The question arose whether some of the fluoride removed by the filter from the water could have accidentally recontaminated the water and poisoned him. Since the patient had been proven to be unusually intolerant

to the drug, a relatively small amount could have caused his death.

I received specimens of his organs for fluoride analysis. The coroner found none of the poisons which are usually responsible for sudden death on the body, namely, alcohol, barbiturates, carbon monoxide and cyanide.* His report recorded no test for fluoride. Before giving his final verdict, the medical examiner told me that he noted a large amount of blood in the stomach. He stated that the heart was normal. In the official autopsy protocol, however, death was attributed to heart disease, although no evidence of a coronary or other preexisting heart abnormality was recorded.

Fluoride determinations of twelve organs done for me by Mr. Kosel were unrevealing. This is not unusual in acute poisoning. Two Philadelphia physicians, Drs. Gettler and Ellerbrook[194] who studied five cases of sudden poisoning due to single doses of fluoride, reported very small amounts of fluoride in liver, kidney, heart, brain, namely 0.2 to 0.8 ppm. Other tests which I had done on the body disclosed an extremely low calcium level of the blood, namely 4.4 mg per 100 cc (normal 9-11). This finding is similar to that reported by others in acute (sudden) fluoride poisoning as shown in Chapter VIII.

The low calcium level in the blood, as well as the presence of blood in the stomach, constituted strong evidence that the patient did die of acute fluoride poisoning. Yet, one missing link was needed without which it was impossible to complete the diagnosis: This corpus delicti was the stomach content. The medical examiner was unable to provide it for fluoride analysis because of the excessive disintegration of the stomach following the death.

This case demonstrates the great difficulties with which physicians are constantly confronted in establishing a

* Zawadzki, E. S., M. D., Wayne County Medical Examiner, to G.L.W. 1/10/63.

diagnosis and relating cause to effect. For this reason I continued to search for new criteria which would assist in pinpointing the diagnosis.

Excess fluoride in urine and blood have been used by biochemists as an indicator of fluoride intake into the body. However, because of wide variations in a person's tolerance to the drug due to age, state of nutrition, dietary habits, occupation, etc., it is not possible to set up iron-clad reliable standards for what are normal, and what abnormal, levels of fluoride in urine, blood, bones and other organs.

Dr. H. C. Hodge, of the University of Rochester, an ardent exponent of fluoridation, has claimed that no harm can occur unless at least 5 mg per liter (5 ppm) of fluoride is present in the urine.[195] This concept, although widely publicized in medical journals, is based on this scientist's arbitrary view; it is not supported by factual data.

In pursuance of this idea, I had more than 200 urine samples analyzed for fluoride. The daily fluoride elimination in allergic persons, particularly in those intolerant to fluoride, was compared with that of individuals who had suffered no ill effect from drinking fluoridated water and of individuals residing in non-fluoridated areas. At no time was there any correlation of their symptoms with the level of fluoride in their urine. In other words, the amount of fluoride present in a person's urine does not indicate how susceptible he is to damage from fluoride. In fact, those who eliminate little or no fluoride in their urine might, under certain conditions, accumulate relatively large amounts in vital organs, as did patient C.E.B. of Racine, Wisconsin (page 210).

Thus, my intention to use urinary fluoride as a criterion came to naught.

Another approach was pursued. According to Dr. Roholm,[82] fluoride tends to withdraw calcium from the system. Simultaneous determinations of calcium and fluoride in

the daily urine specimens, I reasoned, should indicate to what extent fluoride disturbs the system's calcium balance. This procedure, I hoped, might turn out to be the desired tool for establishing whether or not a given person is susceptible to harm from fluoride.

Forty-eight persons suspected of fluoride poisoning and fourteen normal individuals cooperated in this study. They were placed for three days prior to the test on a carefully measured controlled diet; some diets contained 2000 mg calcium (high calcium diet), the others 137 mg (low calcium diet). Each was given 15 mg of sodium fluoride in water, by mouth. This is equivalent to 6.8 mg of fluoride, an amount small enough to be relatively harmless in a single dose, yet large enough to be detected in the urine 24 to 48 hours later. The amount of calcium was determined in the same specimens.

In carrying out new, untried research, one idea often leads to another: For example, when given by mouth, the total dose of fluoride does not enter the bloodstream. An unknown quantity leaves the system through the bowels and does not reach the blood. In order to obviate this possibility and to by-pass the stomach, sodium fluoride was injected directly into the bloodstream in thirty-four patients.

The results were most enlightening.

Five patients had slight side effects, three suffered more severe reactions, mostly nausea, vomiting, migraine-like headache and visual disturbances from this minute dose of fluoride. However, the severity of these symptoms could not be attributed to increased calcium elimination through the urine. Contrary to my expectations, calcium in the urinary specimens did not parallel the amount of fluoride as it had in the arthritis patient R. R. from Bloomfield Hills, described on page 208.

Interestingly, several persons eliminated an unusually large amount of urine, as much as 6 liters, after the test

dose compared to their customary daily elimination of one to two liters. Excessive thirst (polydipsia) and excessive urinary production have been reported in fluoride poisoning from much larger doses.

Since this method did not provide conclusive findings, another method was devised to determine whether or not a person can tolerate fluoride in minute doses. Calcium and phosphorus levels were determined in the blood following an intravenous dose of 15 mg of sodium fluoride.

Again, the results were erratic. In several persons there was a significant fall in blood calcium and blood phosphorus, in others a marked rise after the intravenous test dose of fluoride. At first these results were disappointing to me because they lacked consistency. However, as I learned more about how fluoride affects the human organism, I realized that nothing other than inconsistent results should be anticipated. The wide variations from one person to another in fluoride's absorption, storage and elimination related to many variables, especially age, sex, state of health and nutrition, previous exposure to, or intake of fluoride —all make for inconsistent results.

The basic lesson from any work on fluoride is the fact that no two persons respond alike.

My studies on fluoride and calcium elimination had an aftermath:

Drs. Muhler and Wagner, University of Indiana, Bloomington, followed my procedure using six normal persons for their tests. They obtained similar results: Excretion of fluoride and calcium after a given test dose was inconsistent.

Their article, published in the *Journal of Dental Research,* Vol. 38, page 1078, 1959,[66] revealed a much more significant result than that which they set out to find. Yet, they and other exponents of fluoridation have paid little attention to what this research really disclosed:

Their six "experimental persons" eliminated only about one-third of the fluoride given to them in the test. This is a

far cry from the usual claims made by the P.H.S. based on work by Drs. E. J. Largent[196] and F. J. McClure[65] who reported that only 10% to 25% of ingested fluoride is retained in the system.

I set up additional projects designed to enlighten me further about fluoride's action on the human body.

For instance, I skin-tested more than 2000 allergic patients in my Clinic with a 1% solution of sodium fluoride. One per cent solutions of sodium bromide and sodium iodide, injected simultaneously as a skin test, served as controls.

In most cases fluoride reacted much more strongly than the two companion halogens. The usual response to the injected fluoride solution is an irritated area on the skin. In four patients, however, I noted a strong so-called "wheal" reaction, the same kind as that seen in hay fever patients sensitive to ragweed. The significance of these reactions with respect to the patient's tolerance is difficult to assess.

A number of food items, drugs and volatile household products were analyzed for their fluorine content. These studies have furnished interesting results, but have not yet been processed for presentation in medical journals.

Having been alerted to the effect of fluoride, I observed in some of my patients that fluorine-containing drugs may induce side reactions closely simulating fluoride intoxication. This is contrary to the view currently accepted by the medical profession. It is generally believed that the fluorine and carbon atoms in these drugs are so closely tied together that fluoride ions do not dissociate from the molecules. Thus it is assumed that chemically-bound fluorine remains innocuous because it is eliminated through the kidneys in the same combination as consumed.

However, at a chemical laboratory in Cambridge, England, I was shown the fluoride analyses of a patient's urine who had been taking a tranquilizer containing 16 per cent

of fluorine. This drug, taken three times daily for three months provided a total daily intake of 2.4 mg of fluoride, The patient was suspected of ill effect from fluoride while using the drug. Analyses for "free" fluoride (not bound to other atoms) in the daily urine samples obtained September 13 to 15, 1962, ranged from 1.86 to 2.76 mg. These amounts represented 76 and 90% respectively of the total fluorine (bound and as fluoride ion) present in the urine on the above mentioned dates. Since other major sources of fluoride intake were ruled out in this patient it must be concluded that fluoride did split off from the drug's molecule and thus caused damage.

Another experience indicated to me that fluorine in a drug may lead to fluoride storage in the system. One of my own patients, Mrs. J. T., age forty-two, residing in low fluoride (0.1 ppm) Detroit had been taking a fluorine-containing corticosteroid drug (one of the active principles of adrenal glands) for 8 years when she first consulted me for asthma on August 20, 1963. Six weeks after discontinuing the drug she was still excreting 1.46 mg per day (0 to 0.3 mg is normal). It was not until three months later that the urine became free of fluoride. The persistent elimination of fluoride after she had discontinued the drug constitutes evidence that over the years considerable fluoride may have been released from the drug and stored in the system.

On August 24, 1962, the chief surgeon of one of the leading hospitals in the South consulted me about a nine-year year old boy, W. B. B., Jr. Severe hemorrhages from the stomach necessitated removal of a large part of the child's stomach. After recovery and return home, the boy promptly suffered another hemorrhage so severe that a part of the upper bowel had to be removed. Careful questioning revealed that he had taken a fluoride tablet for prevention of tooth decay, several hours prior to the second hemorrhage. Could the hemorrhages have been due to the tablet which

contained about 1/2 (0.4823) mg of fluoride, the surgeon inquired?

Fluoride ion reacts with hydrochloric acid in the stomach and forms hydrofluoric acid, the corrosive agent which causes ulceration and hemorrhages in the stomach and upper bowel in acute poisoning. The ulcer formation, as stated before, does not take place immediately upon contact of hydrofluoric acid with body tissue, but first begins to form beneath the area of contact.[197] This explains why several hours may elapse before the hemorrhages start.

Upon examination of the microscopic sections of the boy's stomach and upper bowel, I found an unusual condition beneath the lining of the stomach, called teleangiectasis (widening of small blood vessels). The investigation concluded that the fluoride tablets precipitated the hemorrhages in this otherwise harmless condition.

This case demonstrates how a poisonous substance, harmless to many, can cause serious damage to some.

Recently, death due to liver damage has been reported in the medical literature in ten cases from a new, widely employed anesthetic containing 28% fluorine.[198] There is a controvsery as to whether these deaths were caused by the anesthetic or occurred coincidentally. In an effort to determine whether or not the three fluorine atoms present in the molecule might have been responsible, I obtained liver tissue in four of the ten cases for fluoride analysis.

In a sixteen year old girl who died within thirteen days after surgery, there was as much fluoride in the liver (3.98 ppm) as has been noted in acute fluoride poisoning by Drs. Gettler and Ellerbrook.[194] In the other three cases the fluoride levels in the liver were within normal range. The long interval between the surgery and their deaths could have provided the system a chance to rid itself of the fluoride after doing its damage to the liver tissue.

These studies which I have carried out indicate that

fluoride's role in poisoning from drugs requires much more investigation. Currently it is a virgin field.

Because of the many handicaps and roadblocks, especially because of limited funds, I was only able to scratch the surface of some of the problems in which I was interested. Nevertheless, it has given me an appreciation of the importance of fluoride in many disease processes and it has contributed, in a small way, to our knowledge of fluoride's effects. It has already stimulated others to search for facts to which little or no attention had been paid in the past.

CHAPTER TWELVE

COUNTERATTACKS

In 1959, I discussed my data on chronic fluoride poisoning from drinking water at the Pasteur Institute, Paris, with one of France's greatest authorities on calcium-phosphorus metabolism, Dr. G. Milhaux. He showed much interest in my work, but warned:

"You are swimming against the stream. Are you prepared to face the consequences?"

The research in which I was engaged constituted the most powerful evidence against fluoridation. It incontrovertibly proved that fluoridation is hazardous to health.

My research constituted an indictment of those who had initiated the fluoridation program without first securing proof of its safety. It also indicted the multitudes who had permitted themselves to be carried along by the current—who had blindly accepted the word of "authorities" or so-called fluoridation study committees without making their own independent investigation.

In recent years only a few scientists in the U. S. A. had produced research indicative of harm from fluoride, notably Dr. Alfred Taylor, University of Texas; Dr. I. Rapaport, formerly of the Psychiatric Institute, University of Wisconsin; Dr. Clive McCay, Cornell University College of Agriculture, Dept. of Animal Husbandry; Father Sullivan of Boston University; Dr. Reuben Feltman of Passaic General Hospital, Passaic, New Jersey. Their work could be "eliminated" more easily than mine. They were linked

with institutions dependent on the P.H.S. and the U.S. Dept. of Health, Education, and Welfare.

My position was different. I was independent.

Moreover, I had publicly challenged the practices prevailing in fluoridation promotion. I had openly dared to question the validity of research sponsored by the most powerful medical organization in the world, the U.S.P.H.S.

In 1955 I had submitted an article on fluoridation to the editor of the *Ladies Home Journal.* At first he was inclined to publish it. Sensing the fury of the controversy, he compromised by publishing a letter in the May, 1955, issue, page 6, accompanied by one written by the U.S.P.H.S. Surgeon General, Leonard Scheele, now the head of a pharmaceutical company.

Referring to the poisoning which I had encountered, I challenged the P.H.S.:

"The Public Health Service is moving heaven and earth to deny the existence of these cases instead of investigating them."

Such an affront to this mighty organization demanded immediate measures. The Public Health Service, trusted throughout the U.S.A. by every citizen, by Congress and the President, had many big guns and heavy ammunition at its disposal to neutralize the impact of my evidence. These guns were set up on both the political and the scientific front:

The editor of the *Ladies Home Journal* received a tongue lashing by Dr. G. J. Cox, of Pittsburgh, the originator of the fluoridation idea. In a mimeographed brochure[199] distributed by the A.D.A. entitled "Is There a Case Against Fluoridation?", Dr. Cox stated:

"They (*The Ladies Home Journal*) could have prevented the loss of millions of teeth by referring these letters to competent critics."

Dr. Cox's philosophy is characteristic of the entire fluoridation campaign: The people should not be given

both sides of this issue. "Competent critics," i.e. public relations counsels of the A.D.A. and the P.H.S., the two promoting agencies, must shield them from facts unfavorable to fluoridation.

I will mention just a few examples of other efforts by promoting agencies to scuttle my work because the story of this struggle would be incomplete without recording some of these experiences.

On the political front health officials in fluoridated communities denied that fluoridated water could cause poisoning. The strongest denial came from Dr. G. C. Weidner, health commissioner of Saginaw, who at the time of my conference with him in Saginaw had not been aware of the many reports available in the medical literature of harm from fluoride in water naturally. Nor had he realized that Saginaw citizens had become ill from artificially fluoridated water. Nevertheless, in the Pontiac *Press* of April 1 and 2, 1955, Dr. Weidner categorically stated that Saginaw's fluoridated water had never caused illness to anyone. His successor, Dr. Richard S. Ryan, acting health officer, followed up Dr. Weidner's statement in a widely publicized letter* to Dr. Gordon Bates, Canada's chief promoter of fluoridation.

"There has been no epidemic of fluorine poisoning in Saginaw. For emphasis, I repeat, there has been no epidemic."

I checked with some of the Saginaw individuals whose illness I had studied. I learned that the local health department had made no inquiries at any time concerning their illness.

On the other hand, in Highland Park, Michigan, the health commissioner Dr. James Nunn did do some investigating. He had learned through relatives of my patient, Mrs. M.E.J.,—the first case of poisoning from artificially fluoridated water reported in the literature—

* *HEALTH*, Toronto, Ont., March issue, 1958.

that she was emotional when speaking about fluoridation. From this description the health commissioner deduced that her disease had a psychosomatic or imaginary basis. Obviously, he was not aware that she exhibited such clear-cut physical manifestations as internal hemorrhages and retinitis. Who would not become emotional upon learning that fluoride which had been added to her drinking water without her consent was the sole cause of a serious, near fatal illness? To maintain her health she must secure distilled water which she can ill afford to buy. To remain unemotional after such an experience would be abnormal indeed.

Another salvo on the political front was fired by the Michigan State Health Commissioner, Dr. Albert E. Heustis. In a letter dated June 6, 1955, publicized widely by the U.S.P.H.S., he accused me of shirking my duty as a public-spirited physician because I had refused to turn my patients over to his department for examination. Actually in my reply to him on June 7, 1955, I had stated:

"I shall be more than pleased to present my material to an *unbiased group of my colleagues* at any time."

Since Dr. Heustis is the key promoter of fluoridation in the State of Michigan, since neither he nor anyone else in his Department have had any research experience with fluoride's systemic effect and since he holds a political office, I felt that examination of my patients by Michigan health officials could only serve to confuse the issue.

I had made a trip to Lansing during the summer of 1955 to request Michigan's Governor G. Mennon Williams to establish a committee of scientists independent of political affiliations for the purpose of objectively appraising my data.* I had already reported my observations of fluoride poisoning from drinking water in two medical journals. Moreover, I had repeatedly requested an opportunity to present my data to the membership of

* Letter by Dr. G. L. W. to Mr. Lawrence Farrell, Secy. to the Governor, State Capitol, Lansing, dated 9/20/55.

local and national medical societies and to hospital staffs, the conventional way to introduce new scientific findings to the medical profession. These requests were denied.

New efforts were made to counter the effect of my work. According to a standard pattern a letter had to be obtained from someone whom the uninformed citizen would look upon as an authority. A statement by the Assistant Executive Secretary, Mr. A. H. Luthmers of the American Academy of Allergy, not a physician, appeared in the Manchester, Conn., *Herald* of April 2nd, 1959:

"To my knowledge there are no reports of allergic or toxic reactions to fluoride other than the reactions of hardening of tooth enamel."

The officers of the organization had not authorized him to speak for them nor had they knowledge of how the statement originated. When the president of the Academy, Dr. F. C. Lowell of Boston, became aware of it, he wrote me on April 23, 1959:

"So far as we are aware there has never been any formal expression of opinion by the American Academy of Allergy concerning toxicity of fluorine in drinking water."

Investigation revealed that Mr. Luthmers had expressed a personal opinion in a letter dated May, 1956, to a Stamford, Conn., physician. Mr. Luthmers himself stated that the letter was not written for publication.*

There was reason to believe that the request for the Luthmers' statement did not originate on the local (Connecticut) level, but was obtained according to a definite pattern through directives from top promoters, either from Washington, D. C., or Chicago.

At the hearing before the St. Louis, Missouri, County Council at Webster Groves on October 11, 1957, for instance, Dr. Willard Bartlett, the local promoter, likewise announced that St. Louis allergists had "not seen

* Luthmers, A. H. to G. L. W. 5/12/59.

any allergy to fluoride." Actually none of them had ever considered the possibility that fluoride might cause allergic reactions.

Had they been asked twenty years ago whether or not they had seen a case of emphysema from smoking they would also have replied in the negative. Today their reply would be different.

In not a single instance did these efforts to neutralize the impact of my research constitute a bona fide criticism of my data. Instead proponents attempted to cast doubt upon my scientific competence.

Since I held no office or job within the reach of P.H.S. influence I could not be threatened with dismissal. Such practices, incredible as they may seem, are not uncommon in fluoridation promotion.

V. O. Hurme, D.M.D., director, for many years, of Boston's Forsythe Dental Infirmary for Children resigned his position because "restriction of his academic freedom on the question of fluoridation was repugnant" to him.*

Dr. Jonathan Forman of Columbus, Ohio, editor of the *Journal* of the Ohio State Med. Assoc. for more than twenty-five years was abruptly dropped, according to the Columbus *Citizen*, November 13, 1958, because of his open stand against fluoridation.

Early in 1954, a scientist of New York City who wishes to remain anonymous had opposed fluoridation over the radio. The following day the Dean of the Dental School, New York University, with which he was connected, informed him that his services were no longer needed. When the professor threatened to publicize the reason for the dismissal, the university promptly dropped the matter.**

The disparagement by the Milwaukee Health Director, Dr. E. R. Krumbiegel, in the *Milwaukee Journal* of No-

* Hurme, V.O., D.M.D. to G.L.W. 8/9/59.
** Personal communication W. W., M. D.

vember 8, 1955, which has been propagated in the A.D.A. dossier, had failed to silence me. Indeed, I had paid little attention to the abusive statements about me which had become increasingly numerous. Therefore, more effective measures to eliminate me from the fluoridation scene had to be devised. Bigger guns had to be trained at me and my evidence.

It began with a visit by Dr. Heinrich Hornung, a health official of Marburg, Germany. None other than a Torch-supported Detroit welfare agency had made arrangements for his trip to Detroit.

Dr. Hornung, one of Europe's most fanatical promoters, was sponsored in the United States by the American Council on Education* for the purpose of "studying" fluoridation. His itinerary included the key battle areas in the fluoridation struggle: Bethesda, Md., Bartlett, Tex., Grand Rapids, Mich., Newburgh, N. Y., and—my clinic in Detroit.

Dr. Hornung arrived carrying a bouquet of red roses for my wife. With pleasure he accepted the hospitality of my home. Knowing that Germans enjoy the out-of-doors, I took him to my farm near Pontiac where I showed him deer tracks, foxholes and modern milking equipment. I also showed him, at my clinic, some of the data which I had accumulated in connection with the 52 cases of poisoning from fluoridated water, a report of which was about to appear in a leading European medical journal, *Acta Medica Scandinavica*.[189]

Some individuals had written letters to me describing their illness. Before embarking upon a study of their cases, I had mailed them a questionnaire for the purpose of determining which to eliminate and which to carefully investigate. The questionnaire served solely for screening purposes. From their answers I decided whether or not it was warranted to contact the family physician and the

* Cassidy, Florence G., Secy. Committee for Foreign Visitors, United Community Services to Dr. G. L. W. Oct. 18, 1955.

hospitals, where they had been under observation, for further substantiation of the diagnosis. I personally examined most of the fifty-two persons. Some were hospitalized in Detroit for thorough observation and consultation.

On March 24, 1956, Dr. Hornung sent me the copy of a letter which he had directed to Frederick S. McKay, Colorado Springs dentist. This letter was subsequently published in the *Journal of the American Dental Association.*[201]

Dr. Hornung described what he claimed to have seen in my office:

"Dr. Waldbott," he stated, "is an excellent (*'ausgezeichneter'*) scientist in the field of allergy, but on the question of fluoridation his scientific reasoning is tarnished constantly by an emotional bias."

"Dr. Waldbott *distributed* a questionnaire in which 'leading' questions were listed, and whenever a single one of these questions was answered positively by one of the recipients of the questionaire, mostly elderly ladies, this was recorded as proof (!) of poisoning by fluoridation," Dr. Hornung continued.

"During a luncheon in Bartlett, Texas, where the drinking water contains 8 ppm of fluoride, I requested that the mayor of Bartlett read the symptoms listed in Waldbott's questionnaire. I wanted to ascertain whether such symptoms occur in a town with a comparatively high fluoride content in its water supply. The response was hilarious. A participant in the discussion declared laughingly: 'Now I know why my bulldogs can't catch the ball.'"

There was every reason to expect a hilarious response not only from the Bartlett citizens but from every dentist in the U.S.A. who read Dr. Hornung's version of my questionaire in the *Journal* of the A.D.A. I could hardly believe my eyes when I read the nonsense which he attributed to me and which he had interpolated into my questionnaire:

"Numbness in thumb, little finger or end phalanx of forefinger; small black moving spots in the field of vision; chronic skin erosion (!); hypersensitivity of mucosa and burning sensation in both eyes; eczema between fingers and toes; itching, dryness in the oral cavity; brittle nails; hives; gastritis and atrophy of the liver (!), especially during summer (!); dull headaches in forehead; pains in the cranial region; backache; falling out of hair; pains in arms and ankle joints; frequent disturbance of the faculty of thinking, and improvement immediately after change of domicile."

Dr. Hornung must have lifted out of context and attributed to me some of the patients' own descriptions in their replies to my questionnaire.

"Dr. Waldbott's questionnaires," Dr. Hornung continued, "were distributed (by Dr. H.) in Marburg, Germany, a city where drinking water contains hardly any fluoride (0.2 ppm), but where it has been chlorinated for years."

In his questionnaire Dr. Hornung substituted the words "chlorine" and "chlorination" for "fluorine" and "fluoridation." He implied that on the basis of answers received (had he followed my method of diagnosis) one half of Marburg's population would have been poisoned from chlorinated water.

I first learned that this letter had appeared in the Sept., 1956, issue of the *Journal of the American Dental Association* from a Detroit *Free Press* reporter. It was the subject of a nationwide news release on August 31, 1956.

Did I have anything to add, the reporter inquired?

This distortion of facts and the manner in which it was propagated caught me completely by surprise. Any offhand remarks would only have further damaged my position.

The next day the Detroit *Free Press* featured my "so-called" research on fluoride poisoning and my "emotional" approach to the subject of fluoridation.

To this day I am still amazed at my complete unaware-

ness concerning the real purpose of Dr. Hornung's visit. I considered this man a scientist. Due to my German upbringing and education the thought would never have crossed my mind that a health official's motives could be political rather than scientific. His gift of roses to my wife had convinced me that he was a gentleman. It was perhaps my German background which made me assume that a scientist, a German, and a gentleman could only be interested in science and truth.

The American Dental Association and the P.H.S. utilized this letter for all that it was worth. The Hornung story was duly propagated wherever fluoridation raised its head (Table 14). Whenever my name was mentioned in connection with fluoridation, the local promoting dentist or health official handed the story to the newspaper or the local fluoridation committee.

The letter was reprinted from Connecticut to California—from Maine to Florida. It appeared at public hearings, in the press, over the radio, in Australia, New Zealand, Holland, Germany, England, Sweden, Switzerland, in medical and dental journals.

The editor of the New Canaan, Conn., *Advertiser* published editorials on April 3rd and 17th, 1958, on "Waldbott's Cases" under the paradoxical caption of "Public Information Service."

Whenever the U. S. Public Health Service received inquiries from citizens, scientists or scientific organizations concerning Dr. Waldbott's research, V. L. Diefenbach, D.D.S., acting Chief, Education and Information Services, Division of Dental Public Health, responded with standard enclosures featuring the Hornung letter in connection with other material equally misleading. It resulted in labelling anything I said as "unconvincing" and "unscientific" regardless of the fact that Dr. Hornung in his letter had designated me an "excellent scientist" in my

Table 14

SAMPLING OF NEWS MEDIA WHICH PROPAGATED THE HORNUNG STORY

Newspapers

Domestic

Saginaw News, 8/31/56

Detroit Free Press, 8/31/56

Pontiac Press, 9/19/56

Worcester, O., Daily Record, Oct., 1956

Grosse Pointe News, 10/11/56

Hartford Courant, 10/14/56

Bar Harbor, Maine, Times, 10/25/56

Tonawanda, N.Y., News, 10/24/57

New Canaan, Conn., Advertiser, 4/3/58 and 4/17/58

Manchester, Conn., Evening Herald, 9/2/59

Foreign

Andover (Eng.) Advertiser 1/4/57

De Nederlandse Gemente, S'Gravenhage, Holland, 2/3/62

Berner Tagblatt, Bern, Switzerland, 12/29/62

Der Bund, Bern, Switzerland, 2/3/63

Medical and Dental Journals

Journal Amer. Dent. Assoc. 53:325, 1956.

ADA News Letter, 8/31/56

Der Hautarzt, 1957, p. 368.

Zahnartzliche Mitteilungen 59:268, 1959

Nordisk Med. 6:25, 1959

Postgraduate Medicine 26:648, 1960

Nutrition Reviews, 19:259, 1961.

Books

Commission of Inquiry, Fluoridation of Public Water Supplies, Wellington, New Zealand, 1957, p. 101

Report to Des Moines City Council by Dr. J. R. Spears, 1959, p. 38

Year Book of Dentistry, 1958, p. 137

Letters

V. L. Diefenbach, D.D.S., P.H.S. to R. L. Jones, Jonesville, Ohio, 1/31/58

Dr. Diefenbach to H. D. Donahue, U.S. House of Representatives, 1/24/58

Dr. Diefenbach to E. L. Miaiazek, Norwich, Conn., June, 1963

F. Bruce Rice, Chief Dental Health Officer, World Health Organization to A. Naismith, Kingston, Ont. 7/18/62

J. W. Krup, D.D.S., Rock Island, Ill., to G. L. W. 11/17/61

John Knutson, D.D.S., Asst. Surgeon General, P.H.S. to James Rorty, 8/9/56

Liberty (magazine) Toronto, June 1957, p. 48

Radio Station WBZ, Boston, Oct. 23, 1963

own specialty. Needless to say each editor gave the story his own slant.

Indeed, this device accomplished its purpose: It completely neutralized the powerful evidence which I had produced.

Curiously enough, in spite of his flagrant abuse of my hospitality, Dr. Hornung continued to woo my "friendship." Months after he had written his letter, I received a greeting from him written during one of his vacations: "As true scientists," he stated, "we may differ in opinions, but we may still remain good friends." On one occasion he sent me a postal card from my home town, Speyer, Germany. I often wondered whether or not he went there on an official mission to research my background from the cradle to obtain more material for another letter to some of his American friends.

Only once did I see Dr. Hornung again. I was invited to speak to a group of physicians at the behest of the Health Department of the City of Frankfurt, Germany. He had little to say at the conference. After the meeting, however, I saw him gesticulating to several physicians who had heard my talk. Was he explaining to them why bulldogs couldn't catch balls in Bartlett? Was he trying to convince his listeners of the competence of Bartlett's mayor to assess the illnesses of his townsmen?

On the advice of my attorney I initiated steps for a libel suit against the *Journal of the American Dental Assoc.* Its editor promptly offered me space in the *Journal* of Dec., 1957, page 873, for a reply to the Hornung letter.[181] At that time I had had very little experience with legal matters. Instead of answering Dr. Hornung's slanderous implications I thought it preferable to give the dentists positive information about my recent research. This gentle approach, however, proved to be ineffective. Even after a second clarification had appeared, this time in the A.M.A.'s *Archives of Environmental Health,* Vol.

4, page 459, April, 1962, the P.H.S. spokesman persisted in propagating the Hornung fabrication.

The device of visiting a scientist for the purpose of discovering a means by which to downgrade him publicly and thus neutralize the impact of his research is frequently employed in fluoridation promotion:

During the course of a series of experiments on cancer, Alfred Taylor, Ph.D., at the Biochemical Institute, University of Texas, one of the nation's most respected cancer researchers, observed that water fluoridated at 0.44 ppm shortened the life span of cancer-prone mice. Although Dr. Taylor emphasized that his conclusions were tentative, two P.H.S. officials called on him in his laboratory, Drs. H. T. Dean and H. Andervont. Subsequently the P.H.S. pronounced Dr. Taylor's experiments invalid because, in addition to water, the pellets fed the mice also contained fluoride.[202]

In subsequent experiments,[203] Dr. Taylor eliminated the basis for the P.H.S. criticism and confirmed his previous observations. This time the feed contained only minute amounts of fluoride. In a series of 12 experiments, involving 645 mice, 1 ppm fluoride in water reduced the life span by 9%.[203]

In spite of the statistically significant evidence obtained from this unusually large number of animals, proponent scientists continue to quote the earlier (1951) preliminary tentative experiments and their critiques. They keep disregarding the final (1954) results.

In order to further neutralize the impact of Dr. Taylor's work, research by Drs. J. J. Bittner and W. D. Armstrong of University of Minnesota[204]was given wide publicity. Because too few mice were involved, the results of their experiments were not conclusive.

Numerous other methods have been devised to forestall an objective appraisal of, and to eliminate, valid research unfavorable to fluoridation:

A mimeographed release by the University of New Mexico through Roland Dickey, Director of the University of New Mexico Press, Albuquerque,* designated as invalid research carried out by members of its own staff, Drs. J. D. Clark and E. W. Mann.

In 1938, the two scientists had published the first statewide survey of water sources in which fluoride occurs naturally using a grant from the State's Department of Health with federal assistance. Of 157 communities, thirty-five had shown that fluoride in their water supplies was "above the danger point of 0.9 ppm, averaging from 1.1 to well above 12.0 ppm of fluoride." The authors set up a "dividing line of the toxic and nontoxic levels" at a concentration between 0.8 and 1.0 part per million.

After fluoridation in Newburgh, N. Y., was initiated in 1945 with a concentration of 1.2 ppm of fluoride, a danger point of 0.9 ppm would have impeded its promotion. Hence, the University of New Mexico's release declared the scholarly work of the two men "hopelessly out of date." The University's spokesman, Mr. Roland Dickey, maintained that it "should be accepted by no one as authoritative on the subject of the addition of fluorides to water supplies."

Similarly, the Vice-President of the University of Texas, Dr. Chauncey D. Leake** issued a statement Oct. 1, 1951, denying responsibility for Dr. Alfred Taylor's valuable research carried out at his own university. Such action is unprecedented in medical research.

Again there are indications that this action did not originate with the respective universities but with a few top scientists in the Dental Branch of the P.H.S. which, through its ability to withhold research grants, can control

* Dickey, R. to Mr. G. E. Radcliffe, Kingston, Ont. Enclosure dated 3/7/52.

** Leake, Chauncey D. to Dr. Edward Taylor, State Dental Director, Austin, Texas, 10/1/51.

their lifeline.

In January, 1964, a sociology student at a midwestern university who wishes to remain unidentified canvassed, as part of her college thesis, 400 members of the local medical society regarding fluoridation. Of 267 replies, 49 per cent were for fluoridation, 34 per cent against and 17 per cent undecided. If this information had become public property, it would have seriously hampered fluoridation promotion in the area. The assistant dean, prompted by the fluoridation chairman, wrote a letter berating the student for allegedly abusing the good name of her school. As is customary, a copy of this letter was sent to the local fluoridation promoter.

Through prompt and decisive action, by threatening a libel suit, the student obtained a complete retraction of the letter's false and libelous accusations. Had she failed to take immediate steps, the letter would have served to discredit the results of her poll and to cast aspersions upon her personal integrity. Nevertheless, the maneuver accomplished its aim. The student, a physician's wife, has thus far refrained from publishing her data.

On several occasions new research projects have been designed and given wide publicity for the sole purpose of countering research unfavorable to fluoridation:

When Dr. J. R. Herman, a New York City urologist found 1795 ppm of fluoride in a kidney stone[205] he was promptly provided with a P.H.S. grant and P.H.S. scientists as collaborators. His second study purported to prove that fluoride has no bearing on the formation of kidney stones (see page 290).

Drs. W. F. Ramseyer, C.A.H. Smith and C.M. McCay, Cornell University, had demonstrated in long-term experiments[206] that rats, fed throughout their life water containing 1 ppm of fluoride, eventually developed periodontoclasia (gum disease) and kidney disturbances. Before the article was published, Dr. John W. Knutson, Asst. Surgeon Gener-

al, U.S.P.H.S. Dental Division, alleged that the results must have been associated with twenty to thirty times the fluoride concentration recommended for fluoridation.* A new team, established with P.H.S. assistance,[207] reproduced the same abnormal changes but the authors attributed them to "old age." No fluoride determinations of tissues were made to rule out the possibility that the changes were due to fluoride rather than to "old age."

Dr. Reuben Feltman of Passaic, N. J.,[208] had administered fluoride tablets to children and to pregnant women. When he reported that about 1 per cent of his subjects could not tolerate the drug, the P.H.S. discontinued support for his research.**

The experience of Dr. Ionel Rapaport, a perceptive scientist, formerly of the Psychiatric Institute, University of Wisconsin, further elucidates how important research is being eliminated. On the basis of official P.H.S. statistics from Wisconsin, Illinois, North and South Dakota, Dr. Rapaport in collaboration with local health officials showed that mongolism, a birth defect characterized by mental and physical retardation, occurs in significantly larger numbers in natural fluoride areas than where there is little or no fluoride in water.[209] Dr. Chas. Curry, senior dental surgeon at Middlefield Hospital, Knowle, England, and part time dental officer in Liverpool, Surrey, Hampshire, Warwickshire and Worchestershire, has supplemented this evidence by demonstrating an unusually high incidence of mottled teeth affecting 25 to 50 per cent of the tooth's surface[210] among mongoloid babies. Dr. Rapaport's basic discovery was bound to seriously threaten the promotion of fluoridation.

Shortly after Dr. Rapaport's first article appeared in 1956 in the *Bulletin* of France's National Academy of Med-

* Knutson, J. W., D.D.S., to Rorty, James, Flatbrookville, N. J. 8/9/56.

** According to F. F. Heyroth's testimony at Santa Fe, N. M., Hearing 11/16/55.

icine, Dr. W.T.C. Berry, a British health official and leading British fluoridation promoter, carried out a survey of mongolism in England.[211] Like Dr. Rapaport, he compared the number of mongoloid births in British cities where fluoride occurs naturally in water with the number in cities where water contains little or none. In tea drinking Great Britain, such a comparison is fallacious, since most British mothers consume as much or more fluoride through tea alone than the average daily dose imbibed with drinking water. For adequate controls Dr. Berry should have selected births from mothers who drink little or no tea. Moreover, thirteen of Dr. Berry's sixty-four cases of mongolism were encountered in cities where the water's natural fluoride content was neither high nor low; thus they did not fall into either category.

In spite of this faulty design which fails to meet scientific criteria, the Berry data have been widely publicized for the purpose of discrediting Dr. Rapaport's research.

Like Dr. Taylor, Dr. Rapaport repeated his studies on a much larger scale and eliminated the basis for criticism. For his statistics he used the mothers' permanent residence rather than the place of their confinement.

In one of the letters critical of Rapaport's work addressed for promotional purposes to the late Dr. F. A. Bull, Wisconsin State Dental Director, dated November 25, 1957, A. L. Russell, D.D.S., Chief of Epidemiology and Biometry, National Institute of Dental Research, a P. H. S. troubleshooter, favored the state of Illinois for further studies. He explained that the state furnished a large sample with virtually complete fluoride histories, largely the work of his associate Dr. Elvove. Like Dr. Herman, Dr. Rapaport was provided with P.H.S. counsel during the progress of his second study, namely five Illinois state health officials under the leadership of Dr. Russell. However, unlike in Herman's case, Rapaport's conclusions remained unaltered.

The second (1959) study established incontrovertibly

that fluoride increases the incidence of mongoloid idiocy. There is less than 1 possibility in 1,000 that these statistical results of the 1959 study occurred by chance.

It covered five and a half million people, 335,000 births and 148 cases of mongolism. Presented in the *Bulletin* of France's National Academy of Medicine, May 12, 1959,[212] it confirmed the 1956 results.

The tabulation of Rapaport's findings (Table 13) shows a rate of 34.15 cases of mongolism per 100,000 births in cities where water contained 0.2 ppm or less. Twice as many cases (71.59) occurred in areas where water contains between 1.0 and 2.6 ppm fluoride.

Table 15

FREQUENCY OF MONGOLISM IN ILLINOIS TOWNS OF 10,000 TO 100,000 (JANUARY 1, 1950 TO DECEMBER 31, 1956)

Total Number of Births	Fluorine in Water PPM	Number per 100,000	Cases of Mongolism
196,186	0.0 - 0.2	34.15	67
70,111	0.3 - 0.7	47.07	33
67,053	1.0 - 2.6	71.59	48

The validity of Dr. Rapaport's 1959 survey like that of Dr. Taylor's second (1954) experiments is beyond question. As in Dr. Taylor's case, the preliminary research is constantly being quoted by promoters of fluoridation whereas the confirmatory data are disregarded as though they did not exist.

Recent correspondence with Dr. A. L. Russell of the National Institute of Dental Research has provided new evidence on the method used to withhold from the medical profession valid research unfavorable to fluoridation.

There is a twofold approach: 1. A special investigating committee is formed to create a sounding board for public repudiation of the scientist and his research. 2. A letter written by a top P.H.S. official, usually A. L. Russell, D.D.S., downgrading the research, is placed before the committee.

The "Rapaport Committee" headed by W. D. Stovall,

M.D., consisted of scientists with no research experience on the relation of mongolism to fluoride. Dr. Stovall wrote on May 10, 1960 to Dr. J. Z. Bowers, Dean of the University of Wisconsin Medical School, and to four other dignitaries that his committee relied largely "on the correspondence of Dr. A. L. Russell and others who have offered criticism and suggestions of re-study or corrections."

Dr. Russell, in turn, establishes his case upon the opinion of the committee. In his letter to me dated March 9, 1965 he stated: "As you are probably aware, these data by Rapaport were examined by ourselves at the Institute and by a committee at the University of Wisconsin. Both groups agreed *independently* that the Rapaport data were so full of errors as to be worthless, and that his conclusions are not supported by evidence." When asked to outline specific errors, in another letter dated March 30, 1965, Dr. Russell merely repeated his accusations and cited several articles which had little or no bearing on Rapaport's research.

Thus, the inquirer, whether physician, dentist, scientist, medical editor, official of a medical society or member of congress, is bound to infer erroneously that there is general consensus among scientists that the research under discussion is invalid.

Dr. Russell's approach preempts presentation of the research through the conventional channels, namely before medical societies and in medical journals where an unbiased appraisal could be obtained. In this way the subject of fluoridation is rendered "non-controversial" and "undebatable" to physicians and dentists.

The main objection to Dr. Rapaport's research pertains to whether or not his survey covered every mongoloid birth in the population. Because his conclusions are based upon carefully controlled samples, not upon the total incidence of mongolism, his final results are valid regardless of whether or not *all* cases in a certain population were discovered.

Recent careful studies on the patterns of occurrence of mongolism by Dr. Alan Stoller et al.* of Victoria, Australia, and by Dr. E. H. Heinrichs et al.** of Watertown, S. D., have clearly confirmed that an "environmental factor (is) operative in a high proportion of these congenital anomalies."

Students of fluoridation are rarely aware that it is almost impossible to publish valid research unfavorable to fluoridation such as that by Taylor and Rapaport in most U. S. scientific journals.

When, in 1950, a P.H.S. survey of inhabitants of American Samoa revealed sound teeth where water contains little or no fluoride the findings were not published in any of the official P.H.S. journals.[212a]

At the University of Oregon, Dr. H. L. Richardson through a series of experiments determined the cause of abortions, stillbirths and infertility which had gradually wiped out a herd of chinchillas. He proved that the fluoride content of food pellets in the animals' daily ration was responsible. Some of this research is described in detail in a book by a lay person, Mr. W. R. Cox,[213] the owner of the chinchilla ranch. It was never presented to the scientific community. In reply to my inquiry for details regarding his work Dr. Richardson indicated that his fluoride research had been abandoned. He was apparently reluctant to become involved politically as stated in a letter dated 3/18/57.

In Evanston, Illinois, extensive P.H.S. studies on fluoridation have been carried out under the direction of Dr. J.R. Blayney, a well known exponent of fluoridation. At the meeting of the International Association for Dental Research, in 1954, he reported experiments which showed that persons with kidney disease eliminate only 60% as much fluoride as normal persons when both are drinking

* Med. Journ. of Australia 1:1-4, (Jan. 2, 1965).
** The Lancet 2:468, (Aug. 31, 1963).

water fluoridated at 1 ppm. When both groups consumed water with only a trace of fluoride (0.1 ppm) no difference in fluoride elimination was noted. This important research, although abstracted in the *Journal of Dental Research,*[214] was never published in full, according to Dr. Blayney's letter* of February 15, 1963. Had this observation been widely disseminated it would have drawn attention of scientists to the constantly accumulating evidence that fluoridated water is particularly harmful to persons with kidney disease.

Another equally important study by a team of P.H.S. scientists which deals with the fluoride content of organs from an air contaminated area of Utah was not presented in any medical journal (see page 251).

It would serve no useful purpose to present additional documents from my files which explain why scientific data unfavorable to fluoridation rarely, if ever, reach the practicing physician in the U. S. A. Only one more example will be cited here. It involves the country's foremost medical journal, the *Journal of the American Medical Association.* In its letter box, a physician inquired whether fluoridated water could cause dermatitis and allergic reactions.[216] Two dentists, Drs. J. L. Bernier and D. J. Galagan, served as consultants to the editor on this purely medical question. Dr. Bernier stated that there was no documented evidence that fluoridated water will produce an allergic response.

In subsequent correspondence I learned that Dr. Bernier, the editor's consultant, was neither familiar with the pertinent literature on dermatitis nor on allergy; that he relied solely upon information received from the P.H.S.; that he, himself, had carried out no research on fluoride, on allergy or on dermatitis.** His 82 publications were solely concerned with dental surgery, none with any of the three subjects on which he had submitted his reply to this im-

* Blayney, J. R., D.D.S., to Lampman, H.H., M.D. 2/15/63.
** Bernier, J. L., D.D.S., to G.L.W. 10/25/61.

portant medical question. Nevertheless, he was selected by the editor as consultant on allergy to fluoride.

I asked the editor for his opinion as to how my cases of allergy[217] and dermatitis[218] due to fluoride, published in two leading specialty journals, could be further documented. In his reply on Oct. 12, 1961, Dr. W.G.B., Asst. Editor, acknowledged that he knew of no other methods for determining the cause of a dermatitis than those routinely utilized by me and listed in my letter to him, namely, the taking of a case history, the evaluation of the pattern of the skin eruption, the patch test, and the double blind procedure.

Another dentist's opinion had previously been published in answer to the question as to what effect fluoride tablets administered to a mother would have on her unborn child. B. G. Bibby, D.M.D., not a physician, assured physicians on June 3, 1961, that the unborn child is protected from adverse effects by fluoride. I cited research to the editor with which Dr. Bibby was apparently unfamiliar and suggested that it be made available to the profession in view of its major importance to the nation's health.

The editor, J.H.T., replied on August 8, 1961:

"I do not propose to publish another view in opposition to that taken by the House of Delegates and the Council on Foods and Nutrition of the A.M.A."

The House of Delegates is the A.M.A.'s political body. The two Councils had arrived at their position under the guidance of three exponents of fluoridation whose approach has been presented in detail on page 261. One of the three, a retired P.H.S. officer, wrote the report on which the House depended.

When, on a third occasion, I commented, October 10, 1963, upon an editorial of October 5, 1963, which categorically denied all proven harm from fluoridated water, the editor frankly replied:*

* J.H.T. to G.L.W. 10/21/63.

"I am not a toxicologist and do not profess competence in either formulating a program in the field (fluoride research) or evaluating results of others.

"On the acceptance of manuscripts for publication, on the other hand, I am ready to stand firm on my decisions. They are based in part upon the advice and opinion of those whose judgments I value and the deliberation of councils and committees duly authorized by the A.M.A."

He candidly added, "Furthermore, I was on the fluoridation committee for Buffalo when I was teaching in the medical school and did everything I could in support of this vital program."

This sentence explains his unalterable position. As a member of one of the many fluoridation committees set up by the A.D.A. for the sponsorship of fluoridation on the local level, he had received one-sided promotional data, much of which was designed to arouse his emotions. Scientific data unfavorable to the project which such committees receive are always accompanied by the usual proponent critiques. Hence, he was bound to be reluctant to lend his ear to an objective appraisal of valid research indicting his position, much less to permit its publication.

Interference with free exchange of scientific data on fluoridation in medical journals has its counterpart in the prohibition of its free discussion in medical societies.

On three occasions members of medical societies had notified me that an invitation to address their society on how fluoride affects the human organism was in the offing. In all three cases action was taken to prevent my appearance.* The third and most recent instance brought forth a full explanation:

On July 24, 1963, R.W.P., M.D., the secretary of a district medical society of a northwestern state, officially in-

* McC. D., M.D., Memphis, Tenn., to G.L.W. 2/10/59—Miller, R. J., M.D., formerly of Evansville, Ind., to G.L.W. 5/6/58.

vited me to report about my research on fluoride on which I had just published a monograph.[84] The date had been set and all arrangements were completed. I intended to limit myself solely to scientific data without touching on the subject of fluoridation.

On Oct. 18, 1963, the secretary of the society wrote again as follows:

"The Executive Committee which comprises Dr. M.A.K.L., Dr. O.V.L. and myself (Dr. R.W.P.) have been vetoed by the. . .District Medical Society comprising all the doctors in this area. Because of the controversial subject on fluoride, the. . .District Medical Society has asked me to tell you that we have cancelled and recalled your invitation to speak to us."

"I am sorry for this as I felt that this would be an interesting subject. Because of the suggestion of another member of our Society, and with the approval of the Executive Committee, I went ahead and invited you."

A subsequent letter from a leading physician from that area casts additional light on the subject. The town had been fluoridated through the efforts of the local health officer, Dr. P. O. Many members of the District Medical Society are practicing in small nearby towns where the water contains fluoride naturally. When Dr. P. O. heard that I was to speak he approached the members, present at one of the Society's meetings, and persuaded them that I intended to stir up sentiment against fluoridation. Physicians have little or no knowledge on what damage fluoride may cause to human health. Undoubtedly my talk would have alerted them, making it possible for them to recognize chronic fluoride poisoning with which they are bound to be frequently confronted. It would also have reflected on the health officer for promoting fluoridation and for being responsible for the illness of citizens whose health it is his duty to guard. Hence, he had ample reason to campaign

against my appearance before the Society.

On January 29, 1957, I received an invitation of a different sort. The Academy of Medicine of New Jersey through its Public Health Committee Chairman, Dr. E. C. Hillman, asked me to participate in a panel discussion on fluoridation. I was to be the sole speaker opposed to fluoridation. This time, I was confronted with three proponents, not two as previously.

My experience with the Eastern Dental Club at the Whittier Hotel, Detroit, impelled me to take the precaution of requesting equal time and an equal number of participants on both sides. Moreover, since this was to be a meeting of physicians, I asked that all discussion be confined to the scientific aspect. I submitted a choice of several titles for my talk. Upon receipt of my letter the invitation was promptly rescinded. The purpose of the meeting turned out to be promotion of fluoridation.

I rejected a similar invitation to appear before the British Nutrition Society October 6, 1962, in London.* This meeting was to be the opening gun for initiation of an all-out campaign for fluoridation in Great Britain. Only two of seven participants were to present data unfavorable to fluoridation. One of the so-called "scientific" papers by Dr. Dalziel-Ward, Central Council for Health Education, was entitled "The Social Aspects of a Policy of Fluoridation of Water Supplies." It was designed to downgrade opponent scientists.

Several other experiences are indicative of efforts by proponents of fluoridation to impede circulation of important data proving fluoridation hazardous.

Dr. H. Velu of Paris, France, one of the pioneers in fluoride research, had written an excellent review article on

* Hollingsworth, D. F., Secy., The Nutrition Society, London, to G.L.W. 1/12/62.

fluoride in *Revue Pathologie Générale,* February, 1956,[219] When I requested a reprint of his article he referred me to the late Dr. H. Trendley Dean, one of the originators of fluoridation, at the time a member of the A.D.A. executive staff. Dr. Dean informed me on January 2, 1957, that he had no reprints of this article. I never learned to my satisfaction how it came to pass that Dr. Velu had sent all his reprints to Dr. Dean.

Similarly, reprints of another important article indicting fluoridation were not obtainable at its source. Dr. Paul Pincus, Professor of Dentistry, University of Melbourne, Australia, was puzzled when shortly after his article appeared in the *Australian Journal of Dentistry,* 1952, numerous U. S. dentists requested reprints at the rate of six at a time.* This, he stated, quickly exhausted his supply.

Dr. Hans Borei of Copenhagen, Denmark, had published a classic book entitled *Inhibition of Cellular Oxidation by Fluoride.*[220] It demonstrates how fluoride interferes with the oxidation (breathing) of body cells. Dr. Borei, the world's expert on this subject, was offered a position at the U. of Pennsylvania where he is now occupied with work along entirely different lines. He has abandoned his valuable fluoride research. When asked by an interested citizen, Mrs. G. C. Dreyer, of Mountainside, N. Y., for a list of his publications,he failed to include his important monograph. In this same connection it is interesting that the official London distributor listed on the book cover, H. K. Lewis Co., Ltd., no longer has any record of ever having handled this monograph, according to a letter dated Aug. 3, 1956, addressed to Mrs. W. M. S., Huddersfield, England.

Heretofore, odd experiences such as these were rarely, if ever, encountered in science. They suggest that efforts are being made to interfere with the free flow of scientific

* Pincus, P., D.D.S. to G.L.W. 10/10/63.

data, to neutralize research unfavorable to fluoridation and to prevent physicians and dentists from learning all the facts about this dubious health measure.

There is another explanation for the sparsity, in U. S. scientific journals, of research disclosing harm from fluoride. Ever since fluoride in water naturally was first proven damaging to health in the thirties and early forties, numerous grants have been made by corporations and the P.H.S. for research designed to prove fluoridation safe. Little or or no money has been available to those in a position to produce data revealing fluoride's hazard. Indeed, like Dr. Borei, other pioneers, the true U.S. experts in fluoride research, among them Dr. F. DeEds of San Francisco, California, and Drs. M. C. and H. V. Smith of the University of Arizona abandoned further studies on fluoride.

The question arises whether they voluntarily relinquished their fluoride research or whether the P.H.S. denied them continued support of their work. Or is it due to intimidation that a scientist abandons his fluoride research?

In October, 1963, two Oxford, England, scientists, Drs. R. J. Berry and Wilfred Trillwood, reported in the *British Medical Journal,*[220a] page 1064, that the rate of growth of cancer cells, grown outside of the body, is significantly retarded by sodium fluoride in a concentration as low as 1/10 part in 1 million parts of water (0.1 ppm).

Like Dr. Rapaport and myself, Dr. Berry has been subjected to much unfounded criticism and—as I learned on a recent visit to Oxford from his close associates—to veiled threats. He decided to abandon all future work on fluoride. As a means of downgrading his important research, the British Ministry of Health propagated a letter, November 22, 1963, written by Prof. Neil Jenkins of Newcastle, who has had no research experience on fluoride's effect on cell metabolism. However, like the widely circulated letters critical of other opponent scientists, Dr. Jenkins' views carry