Fluoridation

By Frederick I. Scott, Jr.

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Fred has been employed as a research and development engineer in chemical processes and materials for electron devices (receiving and power tubes and guidance devices). He moved into sales and marketing of nuclear detection devices in the mid-1960s and subsequently managed the production and sale of electrolytic capacitors before undertaking the marketing operation. In addition to being editor of the two publications, Mr. Scott was an independent medical sales representative until leaving the New Jersey suburbs of New York for the beautiful Blue Ridge mountains of Virginia in 1979. He has coauthored papers on spectroscopy and is a member of the American Chemical Society, Analytical Division; Institute of Electrical and Electronics Engineers; the New York Academy of Science; and the American Association for the Advancement of Science.

In the mid-1970s, Fred developed a deep interest in the role of nutrition in health and disease and has written extensively on the subject in editorials.

The strong evidence against the efficacy and safety of the practice of fluoridating public water supplies continues to be ignored by those charged with the responsibility for public health measures. The disingenuous actions of some scientist advocates of fluoridation and the general antipathy of science journals toward open examination of the subject raises serious questions regarding the objectivity constantly proclaimed for science. Perhaps the weight of evidence cited by proponents refers to the physical weight of the endorsements and not to a preponderance of scientific evidence.

The most recent weighty but non-responsive presentation occurred at Congressional hearings held in February 1980. Officials of the Center for Disease Control of the Department of Health and Human Services appeared before the U.S. House of Representatives Subcommittee on Labor/Health, Education, and Welfare Appropriations to request $9.5 million ($3 million above 1980) for a fluoridation grant program. This program aims to assist communities in starting fluoridation of public water supplies. Its goal is to reach "more than 700 communities by the end of 1981 and, over a ten-year period, to reach near-universal fluoridation of approximately 8600 currently fluoride-deficient water systems."

Representatives William H. Natcher (D., KY), Chair of the Subcommittee, Robert H. Michel (R., IL), and Silvio O. Conte (R., MA) questioned Dr. William Foege, Director of CDC, and his colleagues regarding the safety and efficacy of fluoridation and about allegations that tax dollars were being used to promote and influence local communities to fluoridate. CDC personnel minimized this latter allegation but did not deny it.

The CDC officials were asked to cite (author, title, journal, and date) 1) one laboratory study showing that 1 ppm of fluoride added to drinking water was effective in reducing tooth decay, 2) one blind or double-blind study with a human population showing that 1 ppm of fluoride in drinking water was effective in reducing tooth decay, and 3)" one study demonstrating that
fluoride at 1 ppm in drinking water was safe for human consumption. The CDC people did not respond then or subsequently to those specific requests. They did submit references to six recent evaluative studies in human populations claiming reductions in decayed, missing, and filled (DMF) teeth of 50%-60% along with 56 U.S. and 23 foreign publications purporting to demonstrate efficacy and six studies purporting to assure no significant correlations between fluoridation and increased mortality from cancer or other chronic diseases. With such a volume of supportive references, one would expect adequate documentation of claimed benefits and safety. Few persons, whether scientist or nonscientist, would be inclined to pursue the intense examination of those references needed to assess their validity. Yet, when examined critically and under cross-examination, the chorus of support for fluoridation is seen to rest on inadequate and distorted evidence. Such examinations in this country and abroad are resulting in the rejection of fluoridation.

Although in this commentary it is obviously not possible to conduct the necessary inquiry, several occurrences are useful in assessing the case. In 1978, following a lengthy trial, Judge John P. Flaherty issued a decree prohibiting the addition of fluoride to the water supply treated by a Pennsylvania community (Aitkenhead, et al. v. Borough of West View et al., Court of Common Pleas of Allegheny County, PA, 11/16/78). Fluoridation continues, however, during an appeal on the basis of jurisdiction only. The decision has not been overruled or even challenged on the substantive merits of the case. Among the witnesses were representatives of the U.S. Public Health Service, the National Cancer Institute, and the British Royal Statistical Society.

Subsequently, in a letter to a mayor who inquired about his decision, Judge Flaherty stated that, in his view, the evidence contained in more than 2000 pages of testimony and exhibits was compelling that the addition of sodium fluoride to the public water supply at one part per million was extremely deleterious to the human body and that a review of the testimony will disclose no convincing evidence to the contrary. He received hundreds of letters, many from dentists and physicians, all concurring with his decision. Although he had given scant thought to the matter of fluoridation prior to the case, he acknowledged receiving quite an education and noted that the proponents of fluoridation do little more than try to impugn the objectivity of those who oppose it.

In his decision, Judge Flaherty cited as significant the testimony of Dr. D. R. Taves, a witness for the proponents, defender of fluoridation, and an investigator on several Public Health Service grants. Dr. Taves was asked to shift his role from that of scientist to that of doctor of medicine and to state whether he would recommend that fluoride be added to the public water supply. After a long and evidently unsatisfactory colloquy extending over many pages of testimony, Taves was asked if his testimony was that he recommended fluoridation of public water supplies. Taves replied, "I don't want to state on that." This is the same Dr. Taves who was the principal author of the section on fluoride in a report of the National Research Council (NRC) Committee on Safe Drinking Water published by the National Academy of Sciences (NAS) in 1977. No counterbalancing experts were on the committee to present opposing evidence, much of which was consciously omitted from the report although it had been brought to his attention (Waldbott, G.L., Burgstahler, A.W., and McKinney, H.L., Fluoridation: The Great Dilemma, Coronado Press, Lawrence, KS, 1978, p.337-342). Some evidence that raised questions regarding the safety of fluoridation was included. That evidence was examined in some detail and rejected as being inadequately documented. The authors concluded that there was no generally accepted evidence that anyone has been harmed by drinking water with optimal fluoride concentrations. Despite this extensive experience, though accompanied by questionable forthrightness, this investigator and proponent of fluoridation was unwilling under oath to affirm a recommendation for the measure.
In earlier Congressional hearings, satisfactory evidence for the safety of fluoridation was not evinced (Hearings on the National Cancer Program, Part 2, Fluoridation of Public Drinking Water, held before the Subcommittee on Intergovernmental Relations of the Committee on Government Operations, 95th Congress, First Session, Sept. 21 and Oct. 12, 1977, p. 232ff). Rep. L.H. Fountain, Chair of the Subcommittee, concluded the hearing with the observation that the question of carcinogenicity or lack of it remained unanswered for fluoridation (p. 319).

In a 210-page report prepared for the Ministry of the Environment of the Province of Quebec, Canada (Nov. 1979), the Advisory Committee (of medical doctors, engineers, and scientists) on the Fluoridation of Water for Consumption concluded that fluoridation poses serious dangers to health and that it has not proved to be a very effective deterrent to dental caries. Dr. Philip R.N. Sutton (D.D.Sc.), Academic Associate, University of Melbourne and formerly Senior Lecturer in Dental Science, reviewed the scientific criticisms and fluoride dangers in a personal submission to the Committee of Inquiry into the Fluoridation of Victorian Water Supplies (Australia, Aug. 1979 and Jan. 1980). His 24-point, 284-page review notes the same pattern cited here regarding valueless endorsements, non-responsive official and scientific agencies, grossly exaggerated claims, uncontrollable total intake levels of fluoride, ignored and un-refuted dangers, and the increasing rejection of fluoridation by governments, particularly in Western Europe, following evaluation or reexamination.

In a proponent-funded follow up study of a much-touted experiment, children in fluoridated Newburgh, NY were found to have a statistically significant greater incidence of low hemoglobin anemia and cortical bone defects than in the unfluoridated control city of Kingston, NY ("Newburgh-Kingston pediatric findings after ten years," J.Amer. Dent. Assoc., Mar. 1956, p. 296-306).

The claimed benefit of lower dental costs is not borne out by study either. The American Dental Association reported in Feb. 1972 on the detailed comparison of dental incomes made by the University of Illinois Dental School (Douglas, B.L., et al., J. Pub. Hlth. Dent. 31, 273-81, 1971). The data showed that, in fluoridated cities, the dental patient required 40% more of the dentist's time than in non-fluoridated cities and paid 11% more, while the dentist netted 17% more. In other reports, dental costs for the ten most fluoridated states (average of 90.6% of the population drinking fluoridated water) are shown to have increased 237% over the period 1958-1970 compared to an increase of 214% in the ten least fluoridated states (average of 15.5% of the population drinking fluoridated water, Facts About States for the Dentist Seeking A Location, and Survey of Dental Practice: 1958-1970, Amer. Dent. Assoc. Bureau of Economic Research and Statistics, 211 E. Chicago Ave., Chicago, IL 60611).

While the EPA sets a 1.4-2.4 ppm temperature-dependent maximum limit for fluoride in potable water, the USPHS assures that 1 ppm is safe with no apparent concern for the wide variation of intake by water, food, and air. Meanwhile, others show that airborne levels of only 5-ppb damage pine needles within 30 days and that cattle are decimated at less than the 40-ppm tolerance level set by NAS for forage (Krook, L., and Maylin, G.A., Cornell Vet. 69, Suppl. 8, April 1979; Raloff, J., Sci. News 118, 3, 42, July 19, 1980). Continued investigation delineates the adverse effect on cattle of fluoride emissions even lower than Federal and NY state environmental limits. Forage containing 9-25 ppm of fluoride contamination from such permissible emissions results in chronic debilitating fluoride poisoning (the herds must be destroyed), evidently because the cattle are exposed in utero and during the first months of life, the most critical period of skeletal growth (Crissman, J.W., et al., Cornell Vet. 70, 183-192, April 1980). The NAS studies were made on 3 to 4-month-old calves exposed to dietary, but no airborne, fluoride. Curiously, the same investigators reporting 40-ppm to be safe in forage report 1 ppm safe in water for humans. Despite the vital significance of these findings, NAS feels there is insufficient evidence to recommend any changes in these standards and
apparently plans no determined action regarding them (correspondence between Dr. Albert W. Burgstahler, U. of Kansas and Dr. Philip Ross (NRC) 6/23, 7/22, 7/25, 7/30/80).

Although Consumer Reports is not a scientific journal, its March 1969, and July and August 1978 articles on fluoridation are cited widely by scientific and lay proponents of fluoridation. The claims in those presentations are exhaustively refuted with journal citations by H. Lewis McKinney, Ph. D. (a coauthor on the Waldbott book) in National Fluoridation News xxiv, 3, 3 (July-Sept. 1978) Route 1, Gravette, AR 72736. Dr. K. TakahashiqvI.D., a statistician and previously Associate Professor, Department of Medicine, Tokyo University, examined the scientific literature in detail at the behest of several consumer groups in Japan and presented his findings before an International Seminar sponsored by the International Organization of Consumers Unions in Hong Kong, Jan. 6-10 1980. His examination of the data reported in the scientific studies cited by CR and others revealed significant deleterious but previously unmentioned effects and serious flaws in some of the conclusions drawn from the studies.

Thus, under careful examination of original data, cross-examination under oath of scientific proponents, and critical follow-up assessments of effects, neither the efficacy nor the safety of fluoridation has been demonstrated. Nevertheless, it seems impossible to engage the scientific community or the public health authorities in any effort to examine the subject.

The re-examination of subjects on which strong recommendations have been made challenges one's commitment and integrity. If, as scientists and public health advisors, we can't muster the courage to meet those challenges, perhaps we should all take up a more honest profession such as used car sales or TV repair where at least the results of our services are unequivocal.

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