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BOOK REVEIWS

Fluoridation and Truth Decay and The Fluoride Question:

Panacea or Poison, two books critical of fluoridation that were published earlier this year for the lay reader, are often cited by opponents of fluoridation as authoritative support of their allegations. Two published reviews of each of the two books are enclosed for your information.

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Enclosures

"A Book Reviewed. Caldwell, Gladys, and Zanfagna, P.E., Fluoridation and Truth Decay, Reseda, Calif., and Top-Ecol Press, 1974. 301 p.," Journal of Public Health Dentistry 35:218, 1975.

"This book by two long-term opponents of fluoridation, one a lay person, the other an allergist, is written in such a catchy style that unfortunately it may attract wide readership, thus influencing voter decisions on an important health measure. The book also misrepresents a number of responsible scientific writers. For these reasons, if for no others, it merits review.

"To build their case, the authors use such headlines as 'Dentists Claim 138% Reductions in Dental Cavities' (p. 46). The authors base this on reputable claims that fluoridation often produces 65% reductions, while topical fluorides occasionally produce over 50% reductions and one dentifrice manufacturer has claimed a 23% reduction. No dentist has ever claimed that these benefits were additive. The result, therefore, is a false statement. The book is full of such misrepresentation.

"A particularly vicious misuse of statistics is found on page 228. Zanfagna uses as his source an article by Maitland and Wellock¹ on dental caries experience during an initial nine year period of fluoridation in Danvers, Massachusetts. This report shows reductions in DMFT (decayed, missing and filled teeth) of 72% among seven year olds, 58% among ten year olds, 49% among thirteen year olds and 31% among sixteen year olds. The age 13 sample in 1960 had had fluoridation for a greater proportion of their lifetime and, therefore showed greater benefits than the age 16 sample. Zanfagna focuses on this quite natural disparity between samples of different nutritional experience, according to the following table:

<u>Year</u>	<u>1951</u>	<u>1960</u>	<u>Actual Reduction</u>
Age 16	14.64 teeth	10.12 teeth	31 percent
Age 13	<u>11.38</u>	<u>5.83</u>	49 percent
3) <u>3.26</u>			
1.09 per year or 1.43 per year			

"He concludes from this that the results of fluoridation were 'disastrous: 1.43 DMF per year in 1960 versus only 1.09 in 1951--31% worse after fluoridation!'

"Perhaps the greatest danger of the book is its misrepresentation of facts concerning chronic disability and death. Dr. Zanfagna (p. 246) praises the 'brilliant' work of Ionel Rapaport² linking fluoridation with Down's Syndrome, in spite of the fact that even Rapaport's highest rates for this condition (in fluoridated areas) are only about half as large as the rates reported in a

large number of other studies³ and the fact that several more careful studies of the fluoride relationship have all shown negative results, including the most recent study: (The New England Journal of Medicine).⁴ Zanfagna goes on to report a 'tragedy' in which a Massachusetts mother who had been taking fluoride tablets had had a mongoloid child. Such a case could be called no more than a coincidence even if fluoride were known definitely to pass the placental barrier without interruption.

"Dr. Zanfagna gloats over what he calls 'Hydrofluorosis--Four Fatalities' (p. 258-262). Two of these cases where documentation is easily available^{5,6} are claimed by the attending physicians to be caused primarily, if not entirely, by other pathologic conditions. In the first case the physician (J. F. Linsman)⁵ states that '...the fluoride did not play any role in this particular patient's death, which occurred from uremia.' He also states that his original report of the case should not be interpreted as a deterrent against municipal water fluoridation. The authors of the second report⁶ state that, 'whether or not the elevated serum fluoride concentrations were detrimental cannot be answered with finality,' and 'it is possible that extra fluoride was beneficial for this patient's bone.' The case was one of hemodialysis, where distilled water is usually used to eliminate a number of trace elements. It is therefore irrelevant to community fluoridation.

"No one will dispute the value of open controversy so long as 'truth does not decay.' In this book, however, the decay is so obvious and the bias so great against any acceptance whatever of the known benefits of fluoridation that physicians and dentists should do their utmost to allay the fears it may arouse among the public. The endorsements of fluoridation, after careful study by major medical organizations, are too numerous to mention. Those of the American Medical Association, American Academy of Allergy and the National Kidney Foundation are most pertinent to the material covered in this review."

Bibliography

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3. Cohen, B. H., et al. Some epidemiological aspects of mongolism: A review. Am. J. Pub. Health, 53:223-236, 1963.

4. Needleman, H. L., et al. Fluoridation and occurrence of Down's Syndrome. New England J. Med., 291:821-823, 1974.
5. Linsman, J. F. Letter June 27, 1966 to J. D. Gaynor regarding J. F. Linsman and C. A. McMurray. Fluoride osteosclerosis from drinking water. Radiology, 40:474-484, 1943.
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"The Fluoride Question Reviewed," The Fluoridation Society Newsletter, 2:2, July 1975.

"'The Fluoride Question' is the title of a recently-published book by Anne-Lise Gotzsche, who, in September 1973, wrote an article on fluoridation for The Sunday Times. The original article, which contained a number of misconceptions and was hostile to the fluoridation of water supplies, provoked, according to Miss Gotzsche a nationwide personal attack on her by this Society. Moreover, she claims, attempts were made to 'suppress the dissidents'.

"These allegations are, of course, strongly denied, but it is perhaps even more unfortunate that the authoress should repeat in her book many of the mistakes which invalidated her original newspaper article. She has, for example, still failed to grasp the DMF index - so much so that she is under the impression that there is more caries in the fluoridated area of Hartlepool than in low-fluoride York. The real picture is what one would expect - the reverse.

"The British Fluoridation Studies, conducted after 11 years of treating water supplies, are also misinterpreted in the book, and Miss Gotzsche fails to mention the marked reductions in decay in the deciduous and primary dentition which these studies found, confirming the results of similar surveys all over the world.

"The fly leaf of Miss Gotzsche's book announces that 'The Fluoride Question has become not only a classic example of medical in-fighting, but a fundamental issue of free speech and the deliberate manipulation of public opinion'. Quite.

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Review

Fluoridation confusion

by Professor G. Neil Jenkins

The fluoride question

by Anne-Lise Gotzsche
Davis-Poynter, pp 176, £3.50

Fluoridation and truth decay

by Gladys Caldwell and
Philip E. Zanfagna
Top-Ecot Press, pp 300, \$3.50

Miss Gotzsche's book "although aimed at the general public, is based on original scientific research papers and published reports, and on direct communication with scientists around the world. It does not set out to pass judgement on who is right and who is wrong". Its six chapters cover in an unsystematic and meandering way the history of fluoridation, including allegations that its opponents have not had a fair hearing, a critique of the clinical results on dental caries and the controversy over its safety (including, inexplicably, a discussion of the toxicity of aluminium). Despite its claim not to pass judgement, and the book does not come to any final conclusion, it emphasises antifluoridation arguments (although in a low key) and only rarely does it present adequate criticisms of these views.

Miss Gotzsche presents without comment the favourite opposition statement that the Department of Health and Social Security's 11-year report shows that fluoridation postpones caries by 0.8 of a cavity for one year (not even rounded up to 1 cavity!). She does not emphasise that this is based on the 8-11 year age group in whom the only sites at serious risk are the occlusal surfaces of the molars, known for many years to be less protected by fluoride than other sites. Miss Gotzsche also perpetuates the myth that "fluoride encountered in 'natural' drinking water is calcium fluoride, and the water is hard", whereas sodium fluoride or fluorosilicates are added in artificial fluoridation to "usually soft city water", concluding that evidence of safety from naturally occurring fluoride "just won't hold". The fact is, of course, that all waters, however soft, contain at least 1 ppm of calcium and, in any event, at 1 ppm, fluoride salts are completely ionised—a theoretical concept recently fully confirmed by the fluoride specific ion electrode. Some naturally high fluoride waters are soft and the hardness of artificially fluoridated water is a matter of chance.

On the question of the total intake of fluoride in relation to safety, the amount from sources other than the water, in particular the importance of airborne fluoride from industrial pollution, is

greatly exaggerated. In Britain, tea is the only significant source in a non-fluoridated area (even an exceptional individual who drinks as many as 20 cups a day would receive only about 4 mg, or 8 mg if made with fluoridated water—still within a safe intake).

On the question of suppressing anti-fluoride views she makes the absurd claim: "Policy is decided behind closed doors and no respectable opposition to the official party line is tolerated." The truth is the exact opposite. A tiny minority of dedicated opponents, with a sincerity and determination one must admire however much one disagrees with them have, through normal publicity channels, prevented fluoridation from reaching more than about 5 per cent of the population.

The last chapter is an extremely unbalanced review of the causes of caries and is not particularly relevant to fluoridation. Miss Gotzsche gives prominence to the views of Schatz and Eggers Lura, whose unorthodox belief that acid is unimportant in caries, has never had wide acceptance. Many other points discussed by Miss Gotzsche are not normally regarded as important in caries (eg breast feeding, the protein of enamel, and eating bone-meal) or their effect is ill established (strontium and vanadium in water or food, although molybdenum, with a greater claim, is not mentioned).

Miss Gotzsche describes herself as "an outsider". It would likely explain the large number of confusions and of misleading or frankly wrong statements in her book, of which the following are examples: "decay starts in the dentine below the enamel", plaque may protect the tooth "against the alkalinity of the mouth". She expresses surprise that peppermint should be used to flavour toothpaste when it is "claimed to be the most devastating of cariogenic substances"—it is the sugar in peppermint sweets, not the flavour, which may produce caries.

Fluoridation and Truth Decay covers much the same ground from an American point of view, but at an almost hysterical level. In the first part, Mrs Caldwell discusses the claim that opponents of fluoridation have been penalised for their stand. One editor of Chemical Abstracts was said to have been dismissed because he wrote an article criticising fluoridation and now "owns and operates a salad dressing manufacturing plant". If this is the whole story then undoubtedly a serious scandal has been exposed but it is quite certain that other reasons for the dismissal may not have existed behind the scenes?

The second theme is one that does puzzle laymen. Some environmental scientists regard fluoride as a dangerous

pollutant emitted by steel, aluminium and brick works. How can this be reconciled with other scientists who advocate its addition to water? The answer is that fluoride pollution, at any rate in Britain, is localised to small areas on the windward side of these industries and affecting animals living exclusively on contaminated herbage, rather than human populations. Mrs Caldwell refers to large areas of forest near Los Angeles damaged by industrial pollution, officially attributed to ozone by those responsible for monitoring the atmosphere who, she states, do not even estimate fluoride. She herself arranged for some analyses of affected pine needles for fluoride and obtained figures (whether on dry or wet weight is not stated) of between 64 and 79 ppm, from which she concludes that fluoride caused the damage. A good case is made for more investigation on atmospheric pollution and a more open-minded attitude by the authorities but its possible relevance to human consumption and in particular to the fluoridation of water is not established and seems tenuous. Mrs Caldwell's writing will add to the layman's confusion particularly as she lumps together inorganic fluoride with the propellants of aerosol sprays and other organic fluorides having totally different effects.

Dr Zanfagna's section of the book is a completely biased, dogmatic tirade against fluoridation. To Dr Zanfagna, fluoridation is not "the dental health miracle of the age" but "the consumer fraud of this polluted century" and fluoride is "a cumulative enzyme poison not safe at any dose". Evidence for the benefits of fluoridation is ignored or misrepresented with numerous factual errors (eg that fluoride tends to increase pyorrhea), or illogicalities (eg fluoride does not prevent caries because it does not prevent the formation of dental plaque—no mention of the well-established effects of reducing the solubility or favouring the remineralisation of enamel). The tone of Dr Zanfagna's writing is such that no serious students are likely to be affected by it but, unfortunately, some of his points might appear plausible to the non-scientists who make decisions about fluoridation.

G. Neil Jenkins

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