POISON IN YOUR WATER

by Doctor Leo Spira

The high pressure drive to impose fluoridation upon the people of New York highlights the importance of this agitation. Unfortunately few people understand the implications of the fluoridation movement. The following is a brief summary of fluoridation, as seen from the laboratory and clinical points of view. THE EDITORS

THE PROPOSAL to add fluorine to the public water supplies to make up a concentration of 1.2 parts per million (p.p.m.) for the purpose of allegedly reducing the incidence of dental decay in children is a subject of heated controversy all over the country. It is strongly opposed by an ever-growing section of the nation on several grounds: constitutional, legal, medical, religious, moral and ethical, amongst others. In numerous cities and towns, citizens have organized themselves for the purpose of opposing the wanton addition of the poison to their drinking water, which would have to be ingested by everybody irrespective of age and state of health, and without taking into consideration whether it is wanted or not.

Thus, the controversy between the fluoridators, on the one hand, and their opponents, on the other, has entered the realm of several professions and industries, each of which has taken part in the dispute according to their special spheres of knowledge and interest. The apprehensiveness about the project centers to a great extent around the accumulating knowledge of the harmful effects caused by the long-continued ingestion of

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even small quantities of the chemical substance.

Fluorine is the most potent protoplasmic poison known to toxicology. It affects the enzymes, material essential for the proper utilization of food and for the maintenance of the organic functions of the body. It has a special affinity for the nervous system, on whose enzyme cholinesterase it exerts a suppressing effect. Being a cumulative poison, its deleterious action is bound to increase with advancing age.

Damage to the nervous system, namely, the brain and spinal cord, the peripheral nerves supplying the voluntary muscles of the body, and the vegetative nerve bundles which supply the involuntary muscles as well as the inner organs, including the endocrine glands, will be manifested by an abnormal function of the respective organs supplied by the damaged constituent part. Since, however, fluorine does not necessarily attack the entire nervous system in any one person at the same time, its manifestations will vary according to the particular part affected.

THE PROTRACTED ingestion of fluorine is followed by a chronic disease, in which symptoms attributable to a disturbance of the endocrine glands are conspicuous. The first obvious signs to appear on the surface of the body are those produced by a disturbance of the parathyroids, four small glands embedded in the upper and lower pole of both the right and left lobe of the thyroid. Since the parathyroid glands are concerned with the maintenance of a proper level of calcium in the body, material as indispensable to life and health as is oxygen, organs regulated by them will often be the first to suffer to a larger or lesser extent. These are the skin and its appendages, the teeth, nails, and hair.

Damage to the skin is manifested by itching even without visible cause, by outbreaks of boils and weals, by "athlete's foot" and, in more pronounced cases, by eczema in any part of the body, which does not respond to any kind of local treatment but promptly disappears on internal treatment directed against chronic fluorine poisoning.

The teeth undergo changes known under the name of "mottled teeth," which are universally accepted as the first external visible sign of chronic fluorine poisoning, caused by the long-continued daily ingestion of as little as 1 p.p.m. of fluorine (equal to 1 mg in a litre, 1/120th part of a grain in a pint of water) during the period of calcification of the permanent teeth, that is to say, during the first 8 years of life. Swelling and bleeding of the gums occur, sometimes so pronounced as to lead to the development of pyorrhoea and to the subsequent loss of the teeth.

The nails become so brittle that even a slight accidental knock on a hard object—for example, the edge of a table—causes them to break across. Chalky-white specks, patches, and horizontal lines, closely similar to those observed on "mottled teeth," develop on their surface, giving rise to the designation of "mottled nails." The commonest feature is the occurrence of raised longitudinal ridges on the finger- and toe-nails.

The hair falls out prematurely, leading to a more or less pronounced baldness at an early age.

IT IS a well-established fact that the deleterious action of fluorine consists in depriving the body of calcium. Only the therapeutic administration of a calcium salt will replenish the deficiency and improve the condition of the victim. There are, however, certain lesions produced by fluorine, which cannot be rectified by any method of treatment. Amongst them, the damage seen on "mottled teeth" is permanent and can never be repaired. Since calcium is deposited in the skeleton to a much greater extent than in the teeth and nails, in chronic fluorine poisoning the structure of the bones becomes rarified and weakened; they become brittle and break easily as a result of a slight accident. In the skull, the bone housing the inner ear apparatus becomes studded with numerous chalky-white specks and patches which are closely similar to those seen on "mottled teeth" and "mottled nails" respectively. This results in a slowly progressing deafness, and in many cases its victims become stone-deaf and dependent on hearing aids. A large number of these victims of chronic fluorine poisoning are seen in the streets of New York City.

It is not the parathyroid glands alone, however, that are affected by fluorine. The lesions described are frequently accompanied by brown patches of skin in various parts of the body, closely similar to those encountered in chronic arsenical poisoning. They are evidence of a disturbed function of another set of endocrine glands—the adrenals—which regulate the pigmentation of the body. On treatment directed against chronic fluorine poisoning, the brown patches of skin disappear. Other evidence of fluorine affecting the adrenal glands are low blood pressure, general lassitude, tiredness, and lack of energy.

Yet other endocrine glands may be affected by toxic amounts of fluorine, as manifested by the presence of a female distribution of pubic hair and of an enlargement of breasts in young men, thus leading to the designation of "feminized males."

The peripheral nerves are frequently involved. Attacks of neuralgia in the arms and legs and, more particularly, severe nocturnal

cramps in the calves are often complained of by the victims of chronic fluorine poisoning. The occurrence of "pins and needles" and of the sensation of deadness and numbness in the hands and fingers is experienced in numerous cases.

The brain itself does not escape unscathed. Those affected in an advanced stage are subject to fits of depression and even melancholia, and to a feeling of apprehension and irritability.

There is severe constipation lasting 2-3 days in mild cases and up to 7 days at a stretch in advanced cases of chronic fluorine poisoning. Constipation is associated with excessive gas formation in the bowels and with attacks of colicky pain in the abdomen. Blisters and cracks form on the mucous membrane of the mouth, causing pain on eating and talking.

With one or two exceptions, all these signs and symptoms of chronic fluorine poisoning here described are closely similar to those occurring in chronic arsenical poisoning. They were observed in the course of an intensive clinical investigation extended over a period of 32 years in Great Britain at a time when the question of a deliberate addition of fluorine to the drinking water did not arise. In greater detail, the investigation was carried out during the recent war on many recruits, both male and female, serving in the British Army. They had lived in communities whose drinking water was either entirely free of fluorine or contained only insignificant traces of the poison, not sufficient to cause mottling of the teeth. Yet not only was a widespread incidence of mottling observed as the first external evidence of ingesting toxic quantities of fluorine but the well-known fact was once more fully confirmed that the teeth of the British population are proverbially bad.

Surely the fluoridators' own way of reasoning would lead us to expect that, owing to the ingestion of ample quantities of fluorine derived from sources other than the drinking water, the British would have excellent teeth.

Chemical analysis revealed the fact that there was scarcely any article of food and drink ingested in everyday life that was free from fluorine. In some of them it is present in large quantities. The average cup of tea, for example, contains as much fluorine as is contained in two to three tumblerfuls of drinking water with a concentration of 1 p.p.m., a concentration which is postulated by the fluoridators as the ideal for preventing dental decay in children. Sea fish is another important source of fluorine intake, sardines, for example, containing a concentration of as much as 15.6 p.p.m. The chemical substance used for sedimentation, filtration, purification, and

sterilization of drinking water derived from rivers, lakes, ponds, and so forth, were found to contain large amounts of fluorine.

For spraying fruit trees and vegetables, fluorine compounds are used, and samples of chemical fertilizers were found to contain as much as 400 p.p.m. of the poison. Dissolved in the soil, it is absorbed by plants and introduced into the body. In the manufacture of aluminium, too, which is widely used in the kitchen, the fluorine-mineral cryolite is an unavoidable raw material. In the process of cooking, acids and alkalis contained in the food corrode the metal and set its impurities free so as to contaminate the food.

Fluorine is a powerful insecticide, fungicide, and rodenticide, and has replaced arsenical preparations as a preservative added to canned food, fruit, juices, and so forth, since its use is not strictly regulated by law as that of arsenic is. We are thus in fact continually exposed to fluorine and caught in its trap, without being able to escape or to protect ourselves.

THE HARMFUL effect of fluorine will depend, amongst other factors, on the susceptibility of the person ingesting it, on the quantity ingested, and on the length of time during which it has been ingested. It is thus clear that it is not the concentration of fluorine in any one article of food or drink which determines its toxic effect, but the sum total ingested in the course of the day. The margin between the tolerated quantity of the poison ingested and the quantity producing signs and symptoms of chronic fluorine poisoning is very narrow. The risk of transgressing the threshold of fluorine tolerance in the older generations, as well as in those chronically ill, suffering, for example, from kidney disease and unable sufficiently to excrete the poison, is a very real one.

Signs and symptoms of chronic fluorine poisoning having been shown to be capable of being produced by appreciable amounts of fluorine contaminating the average diet, it is undeniable that any addition, however slight, of the poison to the drinking water is bound to increase the risk and gravity of the disease.

To ascertain that the clinical findings obtained on man were in fact due to nothing but the action of fluorine, I carried out animal experiments at the Department of Physiology, Middlesex Hospital Medical School, London, England. Sodium fluoride, the substance proposed by the fluoridators to be added to the drinking water of this nation, was added to the drinking water of experimental rats. It was observed that, whereas in man the ingestion of a drinking water with a concentration as low as 1 p.p.m. is sufficient to produce mottling of the teeth, in my rats

mottling was produced by the ingestion of a water with a concentration of not less than between 60 and 100 p.p.m. of the poison. This means that man is between 60 and 100 times more sensitive to fluorine than rats are.

In the course of the experiments on rats several signs of poisoning developed which were identical with those clinically observed on man. The earliest amongst them was intense scratching, without any visible cause. Later on, deep sores developed on the skin in various parts of the body, accompanied by loss of hair. On the scalp a baldness occurred which was very similar in its distribution to the baldness seen in man. On replacing the fluoridated water by distilled water, which is free from fluorine, and on addition of calcium to the food, the sores healed promptly and there was a complete regrowth of hair over the denuded areas.

X-ray examination showed a diminished scrotal shadow, and the testicles degenerated to such a degree that they could be regarded as having to all intents and purposes disappeared altogether.

At autopsy, the thyroid gland was found to have undergone profound changes; it was enlarged and histological examination revealed a lesion similar to that observed in toxic goitre in man.

The kidneys were the organ showing advanced damage; under the microscope they could not be distinguished from those seen in nephrosis in children.

Several investigators reported the development of gastric and duodenal ulcers in their experimental animals. I could find none in my rats, probably owing to the fact that I increased the concentration of fluorine in their drinking water slowly.

THE RESULTS obtained from the clinical examination on man and from the animal experiments were significant enough for me to try to find out whether they could be utilized in a practical manner for application in certain diseases of a hitherto obscure origin.

A man suffering from chronic inflammation of the kidneys (Bright's disease) in its terminal stage was submitted to treatment directed against chronic fluorine poisoning, after every other kind of treatment had failed. After four weeks' treatment he was restored to a useful life.

In another man, a gastric and duodenal ulcer, of which the former had the radiological appearance of malignant degeneration, were completely healed as a result of treatment directed against chronic fluorine poisoning. After 5 weeks, no trace of either of the two ulcers could be detected radiologically.

Children who since birth had been for several years afflicted with

severe eczema all over the body, for which no external treatment brought any relief, were after two or three months' treatment directed against chronic fluorine poisoning completely cured without any local applications.

Of two patients suffering from mental illness, which was complicated by the presence of pronounced brown discoloration of the skin characteristic of chronic fluorine poisoning, one was discharged from the mental hospital as completely cured from both the mental illness and the pigmentation of the skin after not more than 3 months' treatment directed against chronic fluorine poisoning; the other was considerably improved.

Moreover, in the course of my recent investigation of the effect produced by the long-continued ingestion of fluorine on the urinary system, chemical analysis of stones removed by operation from kidneys of patients living in New York City, whose drinking water is now practically fluorine-free, revealed the presence of variably large amounts of the poison up to 1790 p.p.m. derived from normal every-day diet.

THESE being the true facts emanating from a careful investigation, both clinical and experimental, their importance seems to warrant an equally careful checking and re-checking, so as either to confirm or to deny them. Nothing of the sort has, however, been done by the advocates of compulsory fluoridation, who claim that they have only altruistic motives at heart, aiming at the elimination of dental decay. Instead, advocates persistently deny any knowledge of reports on harmful effects of increasing the sum total of fluorine ingested with numerous articles of daily food and drink by adding the poison to the drinking water. Some of them shun continued investigation by stating that "further experiments (on fluorine) are unnecessary."

In this connection, it would seem that their great haste to have communities approve fluoridation is certainly most remarkable.

While discrediting the work, both clinical and experimental, carried out by the opponents of fluoridation, they rely on their own admittedly deficient examination of children in a fluoridated area. In spite of warnings against such unreliable investigation, they adduce negative laboratory findings obtained on children as proof of the harmlessness of their project, oblivious of the fact that serious consequences of fluoridation will not, in all likelihood, become evident before the poison has been ingested over a period of some 25-30 years, too late to undo the harm. The increased occurrence of "mottled nails" amongst children in an experimentally fluoridated area, in

comparison with a control area in which no fluorine was added to the drinking water, indicates that, like "mottled teeth," they are the result of the absorption of increased amounts of fluorine into the general blood circulation; although this fact is admitted by those in control of the experiment at the top level, it is being hushed up by those at the lower levels and omitted from their talks and writings for popular consumption. It must, therefore, be concluded that their statements concerning the greatly reduced incidence of "mottled teeth" following fluoridation of the drinking water must be taken with "a grain of salt." Findings obtained by dental investigators opposing fluoridation on the ground the fluorine does not prevent, but only delays, the onset of dental decay by a few years and that the incidence becomes equalized after the calcification of the permanent teeth is completed at the age of 8 years, are simply ignored.

The fluoridators close their eyes and stop their ears to the grave objection that, in view of the widely varying quantities of water drunk individually at any time of the year at any one locality, and, more especially, in hot climates, the risk of transgressing the threshold of fluorine tolerance is a very real one. Nor will they recognize the risk arising from the fact that the amount of fluorine does not diminish when water is boiled, with the result that a concentration of 1 p.p.m. of the poison turns into a much higher concentration.

Since fluorine is already present in our average normal food in quantities sufficient to produce chronic illness, it is obvious that any increase in the fluorine content is certain to be extremely dangerous.

AN ENLIGHTENED public opinion will have nothing whatsoever to do with, and will resist by all lawful means at its disposal, any attempt to force the nation to take a medicine which is neither desired nor required. Nor will the freedom-loving American citizen submit to an endeavor to have any kind of drug, however useful, deliberately added to the drinking water administered to him by those who are advocating compulsory mass medication, such as fluoridation undoubtedly represents. He rejects arguments put forward by those who have given him abundant reason for mistrust concerning the safeguarding of dental health. He does not forget that state dental directors and public health officers, the agents upon whose shoulders the administration of fluoridation rests, have accepted, without a single word of protest, instructions on how to persuade the nation into the false belief that fluoridation is completely safe and on how to advocate it

with the professed altruistic aim of eliminating dental decay in children. Obviously, the fluoridators have something to hide, when at the expense of the taxpayer, they employ every kind of propaganda, through which they uncritically endorse each other's opinon but silence or discredit valid findings obtained by the hard work of their opponents.

Apart from these constitutional and legal aspects of the matter, it is objected by some groups that fluoridation is a violation of their right to free exercise of religion, when they are forced to take any kind of medicine added to the drinking water or through any other medium.

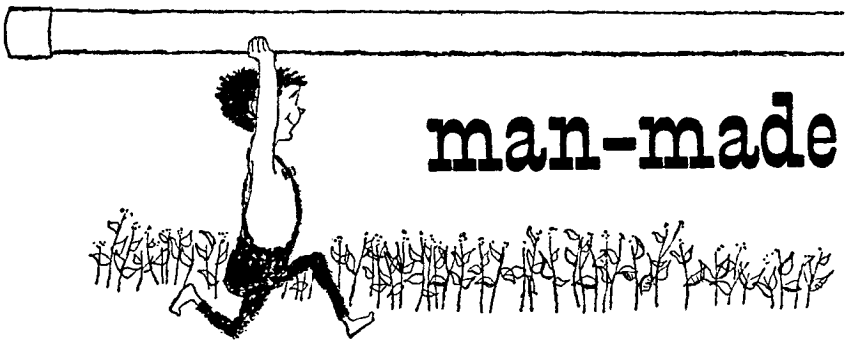
Others consider the heavy expenditure involved as a burden imposed on public funds, when it is proposed that the entire public water supply should be fluoridated for the alleged prevention of dental decay in children, although only one per cent of the water is used for drinking purposes, the remaining 99 per cent being used for industrial and other requirements.

Without conceding any merit whatever to fluoridation while the permanent teeth are forming up to 8 or 10 years of age, one naturally inquires as to what medical theory justifies this medication for 90 percent of the population over 10 years of age. Of course, there are the moral and legal objections as to compulsory medication even if beneficial. As to adults, many sick, infirm, with permanent teeth or having false teeth, it is not supportable on any theory.

IT WOULD, for all these reasons, appear more logical to give children up to the age of 8 years, whose parents so desired, the amount of fluorine claimed to prevent dental decay in media other than through the drinking water, on a prescription from, and under the supervision of, their attending physician or dentist. The advantage of this method of application seems to be so obvious that its rejection suggests the influence of vested interests.

In this connection, it is pertinent to point out that in the process of manufacture of the metal aluminum fluorides derived from the cryolite unavoidably employed emerge as a waste product, which up to a few years ago was not wanted by anybody, even if given away for nothing. It used to be thrown into the sea and into rivers, with the result that the fish died. The discovery that traces of fluorine were capable of delaying by a few years (though not preventing) the onset of dental decay in children pointed out to the aluminum and chemical industries a lucrative way of making use of the waste product. This is rather like an invitation to mankind to dig its own grave and pay for the privilege.

Farmers are using portable irrigation



man-made

FOR HUNDREDS of years the American farmer has planted his corn, cotton and spinach and depended on a bountiful nature to keep them watered. All too often nature has let him down. He has been left with scorched fields, withered crops and a note to be renewed at the bank. But the time is approaching when drought-ridden growers will no longer have to depend on rain clouds to spill out their moisture on a thirsty vegetation.

Thousands already are turning on their own rain when they need it and turning it off when they have had enough. It's a new development called "portable irrigation," made possible by the invention of aluminum pipe. All the land owner needs in order to get this pushbutton rain when he wants it is a good supply of water, a pump, motor and enough aluminum pipe.

The source of water may be a river, lake, creek, spring or well. Just hook up the pumping system and the aluminum pipe will carry this water to where it ought to be. A set of sprinkler heads will distribute it in a rain-like shower over one to four acres at a time. Sprinkler heads and pipe are moved as additional acreage is to be refreshed. This form of irrigation is available to every farmer, regardless of how hilly or rough his land may be, if he has a sufficient supply of water around.

"Snooky" Uhlian has a farm bordering the Cumberland River near Nashville. His 90 acres of bottom land has been in the Uhlian family for a half century or more. Snooky is the third generation to sell roasting ears and turnip greens from it. Up to six or seven years ago there were dry years in which the crops were almost a total failure. There have been three successive years of disastrous droughts since then, but not disastrous to Snooky. During those three dry years he sold around $20,000 worth