

Canada turns to the Sea for relief from Goitre

Brown witch that rides on foam of sea is vital to health—even little troutlets feel benefits of Iodine—Goitre now unnecessary if proper precautions taken by families.



wonderful effects iodine has on the thyroid gland, which is the seat of goitre.

Deficiency of iodine in the thyroid is the cause of imbecility and cretinism. A cretin is an underdeveloped, stunted child lacking in both physical vigor and mentality. We can see from these unfortunate creatures that life is not worth living without an efficiently functioning thyroid gland.

Nature has denied most cretins normal thyroids. Their systems lack the proper iodine flow. Yet a large proportion of cretinism from now on will be almost inexcusable, for goitre need not be endured in the future by anyone.

Until quite recently accurate knowledge of the relation iodine bore to goitre did not exist. The only information scientists had to work on was that goitre was practically unknown in coast communities, while in inland towns and countries the disease was rampant. Switzerland, for instance, had the greatest proportion of goitre afflicted of any country in the world. Another curious feature of scientific investigations was that sailors and persons who lived in the atmosphere of salt water always had healthy thyroids. Goitre became more prevalent as the people moved inland, and this disposition created what became known as "goitre belts"—immense areas in which the percentage of goitre reached unprecedented heights.

The Great Goitre-Belt

The great goitre belt of North America is centred around the great lakes and the Rockies, and includes Michigan, Ontario, Manitoba, Saskatchewan, Alberta and other neighboring territories.

It was scarcely more than half a century ago that medical men suddenly discovered that certain forms of depression and chronic nervousness in middle-aged women living inland, with ashy complexions, dull eyes and apathy, were suffering from a malady of the thyroid gland after the change of life; and what was more interesting, they could be cured by feeding the patients with extracts of the thyroid glands of animals.

A second finding, almost within a decade of the other, was that there was another form of goitre, marked by enlargement and overgrowth of the thyroid gland instead of shrinkage, recognized by protuberance of the eyeballs, hot and cold flushes, warm sweats and incredibly rapid pulse. And what challenged attention was that instead of lasting for years without appreciable harm to the health, it produced an extremely serious illness, with a death rate of nearly 20 per cent within two or three years. This came to be known by the graphic and descriptive title of exophthalmic—or out-eyed—"pop-eyed" goitre, on account of this protrusion of the eyeballs.

The main reason for the alarming increase in goitre was that people were insisting on "pure" salt with their food—that is, salt from which the brown element known as iodine had been ex-

tracted. Some years ago it was found that the thyroid gland differed from other tissues of the body chiefly in that it contained appreciable quantities of iodine. This created great interest. But the amount of iodine was so tiny that it seemed incredible that a mere half-pinch of any substance could possibly produce such extraordinary effects upon the whole human body. Then it was, scarcely five years ago, that the active principle of the thyroid, thyroxin, was extracted and isolated by Kendall, at the Mayo Brothers' laboratory at Rochester, Minnesota, and it was proved by actual demonstration that doses of a few thousandths of a grain would cure myxoedema, or the puffy-faced, under-thyroidism of women, and turn an idiotic dwarf called a cretin into a comparatively normal child of three or four, and that three-quarters of the thyroxin was iodine.

It had already been proved that goitre could be produced in dogs, and then cured by the administration of iodine. Later it was shown that many fresh water fish suffered from goitre, and an experiment conducted by the Bureau of Fisheries in the United States finally revealed beyond argument that iodine was the absolute cure of most goitrous conditions.

Where Fish Come In

This experiment was as peculiar as it was interesting. United States authorities discovered there was being produced in their fresh water hatcheries a rapidly fatal form of enlargement of the thyroid. One of the leading students of the goitre iodine complex, Dr. David Marine, was called in for consultation. He advised putting so much iodine salt per day into the stream supplying the hatchery pools. The results were wonderful. Within six days the fish were scampering and gallivanting about, taking notice of flies and generally

behaving like animals that have been inoculated with a "pep" compound. They were cured.

On the heels of this experiment was the discovery that trout hatched in fresh water, who, like bad boys, ran away to sea water at an early age, were always healthier and better developed than their brothers and sisters who preferred to remain in the fresh water streams. The reason, of course, was that trout that receive the invigorating salt water supply of iodine were bound to develop faster than their comrades who had been denied the proper iodine feeding.

Applied to human beings this opened up a great vista of conjecture regarding goitre. The human body is about 85 per cent water. The theory is that every cell in the body, like fish in an ocean,

requires water with iodine in it if they are to thrive. And the conclusion was that persons suffering from thyroid trouble did not have enough iodine in their "oceans"—that the cells could not be healthy because the water in which they lived lacked the vital element essential to health.

American and Canadian doctors began teaching the gospel of goitre cure and prevention in schools, with the result that goitre almost totally disappeared in many communities. The good news spread across the Atlantic and was promptly welcomed in Switzerland, partly because it was the native home of goitre and partly because of its high degree of general intelligence and open-mindedness. The authorities overcame one of its chief objections, the taste—because this led a certain percentage of pupils secretly to "duck" the dose—by

coating it over with chocolate, which no schoolgirl can resist, and within a few months similar excellent results were obtained. In Zurich, for instance, the percentage of goitre before iodine was used was from 80 to 90 per cent. After iodine, it was barely 30 per cent, while the schools in the canton of St. Gall fell from 87.6 per cent of goitre to 13.1 per cent three years later. So the Goitre Commission recommended that this method of goitre prevention be instituted as a public-health measure over the entire state.

In several Ontario cities somewhat similar action was taken, but it did not go far enough. In one school the medical officer of health discovered that 60 per cent of girls between the ages of 10 and 18 were afflicted in varying degrees with goitre. Immediately it was recommended that pinches of iodine be put in the city water to counteract the injurious condition, but the objections of citizens to "polluted water," which they termed water containing iodine, prevented anything being done.

The really feasible method of regularly supplying the system with the necessary iodine is by taking it in salt. For persons living inland this, in fact, is the only convenient way. Already thousands of Canadians are regularly using iodized salt, a new, yet very old, method of preventing and combatting diseases to which the thyroid gland is subject. Several progressive salt manufacturing concerns are producing this grade of salt, so that now if anyone develops goitre it will be through ignorance or deliberate neglect. Every parent may protect his child against the disease simply by using iodized salt at every meal.

What the Future Holds

Our whole study of iodine and goitre opens up a most fascinating and hopeful vista. If we are able to produce such widespread improvements in the health of a whole nation simply by the intelligent control of tiny amounts of one mineral element in our drinking water, our condiments and our food, what other victories over human ills may not the future have in store?

To sum up briefly, wherever man goes too far inland from his native sea beaches he pays the penalty in the form of goitre, unless he makes good the deficiency in the form of salt. Salt has uses of its own in the economy of which we are not here concerned; but it seems almost certain that a very large share of the salt-craving which the human race has shown in all stages of its history and which is illustrated by such phrases as "not worth his salt," "bread and salt" has been due to the traces of iodine present in all impure salts.

As man became highly civilized, however, he relegated impure salt to the realm of obsolete things, deliberately extracting that vital substance, iodine, from it. And the result was widespread appearance of goitre in civilized countries.

Now it is generally recognized that iodine is as essential to good health as vitamins. And with that knowledge it is known that enlargement of the thyroid can be prevented and frequently cured. Indeed, it should hardly be regarded as a disease, but only as an unbalanced or abnormal condition; and if taken in time—that is, when the sufferer is under eighteen years of age—95 per cent of them can be cured completely by the administration of iodine. Goitre of high degree in parents may result in birth goitre of the child, known as cretinism, in which case the unfortunate infant grows into a stunted, idiotic, club-footed, thick-tongued dwarf and remains so all the rest of his life. A similar cretinism is the cause of a high death rate among lambs, calves, colts and puppies in the goitre belts.

The modern solution to the goitre problem is, of course, regular consumption of iodized salts. The necessary percentage of iodine is now included in iodized table salt with the bitter taste of iodine eliminated. If children are given this salt with their food there is virtually no possibility of their getting goitre.

For those who have been life-long sufferers the future is most hopeful. In a great proportion of instances absolute cures are possible and, when worse comes to worse, an operation can be depended on to cure about 80 per cent of all cases. Iodine plays an important part in operations, too. Its discreet professional use allows surgeons to operate with many more chances of success than were obtained before the powers of iodine were fully understood.