

Thyroid Sets the Pace—Continued

removed, they do not metamorphose at all.

At one time it was thought the changes occurring in the body of a patient who had hyperthyroidism were due to a poison elaborated by the gland. Other theories credited bacterial infection of some sort with the production of these diseases. But the latest work has shown that the disease is the result, not of an invading germ nor of a subtle poison, but of too much of the substance normally secreted by the gland and needed in normal amounts to maintain the body functions.

This normal secretion of the thyroid gland has found a place among the therapeutic agents of modern physicians. It has also, unfortunately, found its way into the hands of the quack. Some reducing agents, sold to fat people who wanted to lose weight easily, were found to contain either thyroxin or dried thyroid gland. A small amount of this substance will cause loss of weight, but the loss is only a side-issue of the hyperthyroidism brought about by taking it when there is no previous thyroid deficiency. Misguided women and girls who took such "reducing" medicine found themselves very ill with dangerously overactive thyroid glands.

The thyroid gland needs iodine to elaborate its hormone. In fact the active principle of the gland, thy-

roxin, contains 65 per cent of iodine. This iodine is obtained from food and water. In some parts of the world the water contains very little iodine and the food grown in such regions also lacks this important substance. Then the gland cannot get enough for its needs and either too little hormone is secreted or else the hormone contains too little iodine to function properly. People living in such regions sometimes have large goiter and the other symptoms of underactive thyroid or thyroid insufficiency. Places where iodine is lacking are apt to be mountainous and far from the ocean. Seashore regions are especially rich in iodine, which is abundant in seawater.

In some places where there is a deficiency of iodine it may be given as a medicine, to supplement the amount the gland gets from the water and food, and thus prevent the development of goiter, myxedema and cretinism. For example, the Swiss government puts iodine in all the salt sold in the country. In some cities in other regions of endemic goiter iodine is fed to the school children.

Iodine is also given to persons suffering from the quite different goiter of hyperthyroidism, just before operation for removal of part of the overactive gland. One dose of iodine is all that may be given to these patients. More would be fatal. Just why this one dose is helpful is one of the still unsolved mysteries surrounding the thyroid.

Not only has thyroxin been isolated from the thyroid gland, it has also been prepared artificially by synthesis from coal tar products. This was first done by Dr. E. C. Kendall of the Mayo Foundation in this country, then by Dr. C. R. Harington of England.

Science News-Letter, February 22, 1930

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The "Barrel" of Corona

When high voltage surges on electric transmission lines jump an ordinary string of insulators, arcs form from one insulator to the other and destroy them.

But when both ends of the string are protected by metal grading shields, the arc jumps through the air from shield to shield and saves the insulators, F. W. Peek, General Electric engineer, has found in his high voltage laboratory at Pittsfield, Mass.

With the shields a greater voltage is required to produce arcing. This is probably because the additional voltage must supply energy to the "barrel" of corona which forms between the edges of the rings of the shields before the final breakdown, Mr. Peek explains.

The striking appearance of this "barrel" of corona is pictured on the front cover.

Electricity
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