The 1932 International Conference on Endemic Goiter and Cretinism

At this groundbreaking meeting, leading scientists vigorously debated the cause of goiter and cretinism. Goiter is ascribed to a variety of causes, including parasites, drinking water and toxins. However, many participants correctly identified the cause as iodine deficiency and advocate iodine prophylaxis on a national scale.

A REVIEW OF THE INTERNATIONAL CONFERENCE ON ENDEMIC GOITRE HELD AT BERNE, SWITZERLAND*

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In opening the meeting, Dr. Carriere, the Chairman of the Swiss Goiter Commission, stated to Switzerland belongs the rather dubious honor of leading the list of the countries in which goiter is endemic. “In this small country, goiter, cretinism, deaf-mutism and idiocy not only blight the lives of a high percentage of the people but also leave the remaining apparently healthy population under the stigma of borderline physical and mental deficiency.”

He said: “The Swiss Goiter Commission... is now in the midst of a great experiment in prophylaxis with iodized salt. The results of this experiment are eagerly awaited.” He said endemic goiter and the intensity of the disease was gradually falling, based on examination of school children and military recruits. He justified this national experiment in iodine prophylaxis, in place before the cause of goiter is clearly understood, by referring to the treatment of smallpox and of syphilis, where remedies were used with success long before the causative agents had been identified.
He emphasized: “in spite of gratifying progress in many phases of the goiter problem, the original question—what is endemic goiter? —how does it originate? — what are the means of its prevention? have yet to be answered.” The Commission thus put these three questions to the medical world, and invited answers from all countries. An attempt was made to have both sides of controversial material presented. Invitations were issued and 188 scientists gathered from 18 countries.

The debate
David Marine (see photo), of New York, began with the surprising assertion that, in endemic areas, there is little regional variation in goiter. He believed a fall in iodine intake leads to goiter, and there is no clear distinction between diffuse and nodular goiter. He stated they can both produce thyroxine, and they are not neoplasms. This statement was strongly challenged.

Holst, of Oslo, reported that although Norway was a maritime country, and all of the inhabitants ate large quantities of fish, goiter was endemic, but there were no cretins.

Roussey, of Paris, quoted the experiments of Repin in which goiters were produced in rats fed with water from goitrous areas. The goitrogenic factor was believed to be either an unidentified gas or a ‘colloid’ substance. But boiled water failed to produce goiter in a large number of rats.

On the second day of the Conference, de Quervain (see photo), of Berne, opened the discussion on iodine metabolism. He believed the daily requirement is 50 µg, and 500 µg/day or more may lead to hyperthyroidism. Iodine taken by mouth acts upon an abnormal gland by changing its activities in the direction of the normal: “...it slows down hypersecretion and stimulates a gland in hypoactivity”.

Kocher (see photo), of Berne, gave the results of the examination of goiters before and after iodine treatment. He found that nodular goiter before treatment showed a diminution in the total iodine, as compared with normal glands, and stated: “Treatment with iodine may lead to a reduction in the size of the goiter”.

Blum, of Frankfurt, struck a strong note of disagreement when he made the apparently heretical assertion that the thyroid is not a gland of secretion. He believed no iodine-containing hormone had yet been demonstrated in the circulating blood. He also said: “No district in the world is so low in iodine that the meager requirements of the body, 50 µg/daily, cannot be supplied”.

Veil stated “the danger of giving excess iodine to a goitrous person is that the person possessed a large workshop which was delicately adjusted to a low supply, and sudden flooding would easily lead to the production of extra thyroxine”.

Sturm, an associate of Veil, mentioned that the iodine content of the blood varied with the seasons of the year, and that excessive amounts administered to people with normal glands were eliminated within three days in the urine.

McGarrison, of the Pasteur Institute, Coonoor, India recognized the part that iodine may play in goiter prevention, but stated the essential cause was, in his opinion, an infection or toxic agent derived from the gastrointestinal tract.

Berard and Dunet emphasized the fact that drinking water plays the most important part in the cause of endemic goiter, and stated that, beyond doubt, certain kinds of water produce goiter. In support, Galli-Valerio suggested: “iodine is only an antidote, and lack of iodine cannot be looked upon as the cause of goiter, just as quinine is the antidote for malaria, but the cause of malaria is not a lack of quinine”.

Crotti believed the cause of goiter was an infectious parasite. In freshly removed goiters he found a variety of microorganisms, including a spirillum, a flagellated infusorian and a fungus. He produced goiter in dogs by giving these microorganisms. He stated: “Iodine treatment of water diminishes or destroys this flora and thereby accounts for its efficacy”.

A recommendation for iodized salt
At the final session on prophylaxis, Jaensch held that it was wrong to dispense iodine to the general populace, and favored personal and social hygiene as the great prophylactic measures, with individual, not general, iodine therapy by physicians.

In contrast, Wagner-Jauregg, in a prescient argument for USI, said iodine prophylaxis:

- needs to act before the disease is manifest (must be given prenatally)
- must reach every one endangered
- its initiative and responsibility should not be left to the individual.

He therefore recommended: “iodized table salt (5 mg potassium iodide per kg) should be compulsory for the population, and that iodine tablets be given to children at regular intervals”.