

coal is, of course, still cheaper to install but the running costs in labor, fuel and maintenance of equipment are much greater.

The hundredfold increase in efficiency by using silver selenide in place of copper oxide, however, appears to bring the cost within the economic range for competition in the power industry. Apart from this it is likely that further improvements in the form of the cell will be made. The idea is still in its infancy.

A square yard of copper oxide sandwich can produce several watts of energy in full sunlight, says Dr. Lange.

Using this as a basis for calculation it is easy to see that a large power station of 300,000 kilowatts would require an area of about one square mile of the silver selenide cells.

The device **does not** lose its efficiency with time, and can be used with very intense illumination. Presumably the solar generators would be erected where there is practically no rainfall. The active surface could be protected from weather influences tending to destroy it by covering it with suitable transparent, resistant coatings.

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the true chemical nature of this vitamin.

Vitamin D, the antirachitic factor found in cod liver oil and generated by sunshine or ultraviolet light acting on fats, is the only vitamin which is sure to be present in sufficient quantity in our daily food, in Dr. Eddy's opinion. Through the extensive development of irradiation of foods by ultraviolet light, it is being placed in many food products and one large baking company is about to introduce it into all of its bread.

Vitamin C, the lack of which causes scurvy, is most important in the formation of good teeth, Dr. Eddy explained. This vitamin is found in citrus fruit juices.

The ability of the human body to make another of the vitamins, known as A, out of the yellow coloring matter of plants, known as carotin, was called to the attention of the chemists by Dr. Eddy. He announced that he had just tested a British preparation of pure crystalline carotin and that this material substitutes for vitamin A in the diet. This rôle of carotin in connection with vitamin A was discovered by Dr. T. Moore of Cambridge, Drs. I. M. Heilbron and R. A. Morton of Liverpool, and Dr. Euler, a German chemist. Scientists have known that yellow plants, such as yellow corn, are better sources for vitamin A but it had not been demonstrated before that the body could manufacture vitamin A out of the yellow carotin, so named because it is the coloring matter in carrots.

Colds and other infections can be guarded against by sufficient vitamin A, Dr. Eddy explained, in telling of research by other investigators who found that insufficient amounts of this vitamin in the diet promoted throat infections, stomach troubles, lung and kidney disorders and even some kinds of deafness.

Whether vitamin G is really the food factor that cures and prevents pellagra, the poverty disease of human beings, was questioned in a paper by Drs. Samuel S. Gurin and Walter H. Eddy of Columbia University, New York City.

In experiments on rats they found that two kinds of diseases of the skin were present in their experimental animals. And in the rats that got adequate amounts of beef extract and yeast rich in vitamin G, a trouble similar to human pellagra appeared in spite of their good growth. The chemists suggested that there are really two diseases, one prevented by vitamin G and another that is not.

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CHEMISTRY-NUTRITION

American Diet Lacks Vitamins Despite Nutrition Publicity

MANY TYPICAL American diets are lacking in proper vitamins despite the fact that vitamins have been stressed in extensive advertising the past few years. Prof. Walter H. Eddy of Columbia University, New York, a leading authority on nutrition, warned in his paper presented to the American Chemical Society at their meeting in Indianapolis last week.

The antineuritic vitamin B is the food factor most likely to be neglected in the foods we eat today, Dr. Eddy said. Vitamin B occurs in the wheat embryo and lack of it causes the disease beriberi. An insufficiency of this vitamin has been found by other investigators to

cause gastrointestinal disturbances.

"We must not be lulled by a sense of security with regard to this and other vitamins," Dr. Eddy said in explaining that investigations of typical American diets showed that they could be improved greatly by doubling the amount of vitamin B in them. Rats fed on a menu similar to that eaten by British working men grew twice as fast when a little wheat germ material was added.

Dr. Atherton Seidell of the National Institute of Health, told of the isolation of the antineuritic vitamin to such a degree of purity that it is more potent than any other preparation yet obtained. Even this research has not yet revealed

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