

encumbrances which children involve are discussed in a thought provoking manner. In his genuine concern over the failure of England to replace its population, however, he reverts to the alarmism frequently voiced by other students. Inasmuch as parents can prevent or postpone children, there is no guarantee that enough babies will be born to prevent a declining population from extinction. The author would not dispense with birth control, but he would impress upon the country the dangers of a declining population. He feels the need for "social reconstruction" towards meeting an urgent situation.

Because of the scarcity of reliable figures on the population of Asiatic and African countries, little space is devoted to them. Limitations of available data and possibilities of future trends are set forth, providing an excellent summary for the student.

Carr-Saunders' *WORLD POPULATION* is a valuable source and is also a timely book, picturing as it does the present situation. Those concerned with population problems and with the impact of nationalism on population policy will find this a stimulating book.

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DIET AND THE TEETH¹

THE publication of the final report of the Committee for the Investigation of Dental Disease is the fourth in a series of important contributions, by May Mellanby and her co-workers, to the literature of dental decay. In 1929 Mrs. Mellanby demonstrated that deficiencies of calcium, phosphorus, and Vitamin D in the diet of young dogs produce marked deleterious effects on the structure of the developing teeth. In 1930 the findings were augmented by demonstrating similar effects of like dietary deficiencies on the teeth of rats, rabbits, and monkeys. A third report (1934), which contained an extension to children of the previous experimental work, indicated that a direct relationship exists between defective dental structure (hypoplasia) and tooth decay. While Mrs. Mellanby's theories, offered in explanation of the etiology of dental de-

¹ *The Influence of Diet on Caries in Children's Teeth. (Final Report.)* The Committee for the Investigation of Dental Disease (Assisted by Alan Deverall and Mable Reynolds) Special Report Series No. 211, Medical Research Council, London, 1936.

cay, are not accepted completely by other workers, there is general agreement for the view, held by a number of other investigators, that an adequate diet well fortified with calcium, phosphorus, and Vitamin D inhibits the progress and delays the onset of tooth decay in children. The final report which describes the findings of three investigations, offers additional evidence in this latter connection.

In a first investigation, three groups of children from 5-14 years of age, living in three separate institutions, were fed approximately the same basal diet for three years with certain dietary supplements. In one group of forty-four children, each child received a daily supplement of 1-1½ ounces of golden syrup. At the end of the three-year feeding period an absolute increase of 14.2 per cent in the number of carious teeth was noted. In the second group of fifty-five children, each receiving a daily supplement of olive oil, there was found an absolute increase of 11 per cent of carious teeth. A third group of seventy-five, each of whom received cod liver oil daily, showed an absolute increase of 9.2 per cent of teeth having carious defects.

In the second investigation, conducted in one institution, two groups of children from 5-14 years of age were fed an adequate basal diet plus daily supplements. One subdivision of this group of children (fifty-nine in number) received olive oil supplements for two and one-half years. These children showed an absolute increase of 13.8 per cent of permanent carious teeth. The second group of sixty children fed daily supplements of a mixture of olive oil and irradiated ergosterol for the same length of time, showed an absolute percentage increase of carious permanent teeth of 8.0.

In the third investigation, three groups of children, all under five years of age, were studied for two and one-half years. At the end of this time, thirty-one children receiving daily supplements of golden syrup developed an absolute percentage increase of 6.6 in teeth showing caries. A second group of thirty-one, fed Vitamin D daily, showed an increase of 4.0 per cent and a third group of thirty-eight, fed cod liver oil daily, developed the least amount of new caries, showing an increase of 3.3 per cent.

The data in the report are subjected to conventional statistical analyses and the differences in incidence of tooth decay in the various experimental groups are considered significant. The report concludes with the statement that "a relatively high Vitamin D content of the food can do much

to diminish the incidence of caries, if the vitamin is given during the development of the teeth; that a beneficial effect may be obtained if the vitamin is given at a fairly late stage of development; and that, even when it is given after the eruption of the teeth, the onset and spread of caries is delayed.”

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