

sunshine is negligible or rendered ineffective by clothing.

It has thus been shown that perfectly calcified and regularly arranged teeth can be produced by including in the maternal diet during pregnancy and lactation, and in the diet of the offspring at the time of dental development, substances containing much vitamin D, calcium and phosphorus, such as milk, eggs, fish and animal fats, and that cereals, especially those rich in embryo such as oatmeal, tend to produce hypoplastic teeth and call for a correspondingly larger supply of calcifying foods for good development. It has further been established that the teeth of the majority of children in Great Britain are imperfect in structure: that dental caries is more likely to attack such teeth than perfect teeth with normal enamel and dentine

and a smooth surface; that the resistance to caries can be increased independently of the original structure by giving a diet containing much vitamin D, calcium and phosphorus or decreased by a diet rich in cereals. If these general principles of feeding were widely adopted, there is little doubt that dental caries (and also pyorrhœa, to which a deficient intake of vitamin A predisposes) "will cease to be the scourge they are at the present time". It may finally be pointed out that none of these conclusions conflicts with the generally accepted idea that the *exciting* cause of caries is the growth of micro-organisms in the mouth: the novelty is the proof that the tooth can resist the onslaught of the microbes by the absorption and assimilation into the body tissues of certain specific dietary factors.

Obituary

MR. E. M. EDEN

EDGAR MARK EDEN died on February 10 at the age of sixty years. He was the eldest son of William Eden, an artist, and was educated at University College, London. After a period with Messrs. Willans and Robinson, ended by ill-health from which he was never wholly free, he became a demonstrator at University College under Prof. Hudson Beare, by whom he was greatly influenced. In 1907 he became lecturer at Armstrong College, where he remained until his life-work began in 1915.

The National Physical Laboratory had undertaken the testing of all gauges for the manufacture of munitions. The old methods were inadequate to deal with the immense number of gauges, and especially screw gauges; entirely new and simpler methods were necessary. Here Eden's genius found its appropriate field. Many others shared in the work; but they would agree that every method finally adopted owed something to his inspiration, and that many of the most important owed everything. The simple machines that he devised for the most intricate measurements did much more than solve an urgent war problem. They enabled British manufacturers to test their own products and to raise appreciably their standard of accuracy. In the list of those who have led the post-War reconstruction of our industries Eden's name should stand high.

In 1919 Eden joined the original staff of the newly founded Research Laboratories of the General Electric Co., Ltd., as head of the workshops. His work now covered a much wider range, but knowledge of it was necessarily confined to a narrower circle. Discerning visitors to the Physical Society's Exhibition will have realised that its quality remained unchanged; but only his colleagues know how much of any success they may have achieved is due to it.

It is impossible to describe examples of his work in a few words; reference must be made to

published accounts, for example, in Rolt's "Gauges and Fine Measurements" and in the *Journal of Scientific Instruments* (May 1922, and vol. 2, p. 119). All his work had a common feature, an economy of means and of material characteristic alike of the best science and the best art. Among modern Englishmen only Rayleigh and Horace Darwin can be compared with him in this matter. Like them he always went straight to fundamentals; he would not even take a hackneyed formula from a textbook; he always worked it out for himself. The colleague who brought him a sketch was often disconcerted to find the final apparatus shorn of all his cherished ingenuities; but it always worked at a first trial, and achieved exactly what was required of it, neither more nor less.

The same hatred of elaboration and ostentation inspired Eden's private life. He loved wild flowers, but not the formal garden; the elegance of Mozart, but not the grandeur of heavy orchestration. It made him a true peace-lover; only his duty to his young family persuaded him, after a bitter struggle, to take even an indirect part in hated strife. Yet he was no shrill pacifist; quarrels vanished like smoke before his genial smile and kindly, but caustic, humour. He was a perfect host; and his accounts of workshop doings at staff meetings were so entertaining that they became recognised as among the Laboratory treats. We are all much poorer for his loss, though the world at large may never know it. He leaves a widow and four sons.

DR. H. M. CADELL

THE sudden death of Dr. H. M. Cadell on April 10 at the age of seventy-three years has deprived Edinburgh and its neighbourhood of a distinguished scientific worker and of one who played a conspicuous and most useful part in the life of the community. Born in 1860, he was educated at the University of Edinburgh and at