

ing of labels to comply with the provisions of the Act. It has approved more than sixty thousand such labels and in this way has probably prevented much litigation. The labels of all prepacked food must contain a list of the ingredients with the main ingredient named first. It must be free from misleading claims about the value or properties of the food. If a content of vitamin is claimed, the exact amount must be stated in international units.

Mr. Adams contrasted the great interest taken in the quality of food by both the Government and people of the United States with the indifference shown in Great Britain. He pleaded for a better education of the public in these matters so that they would come to demand cleaner food of the highest possible standard and so do much to make the work of the Ministry easier. He described the procedure adopted for setting up a standard for any particular food. In principle, it is similar to that used by the Food and Drug Administration of the United States, though it is not carried out on anything like the same scale. Sub-committees are at work at the present time trying to lay down limits for metallic contaminants and considering the use of new preservatives and other chemicals likely to prove popular, especially with the baking trade.

A revealing comparison between the legal control of the quality of the food sold for consumption by farm animals and the laws affecting the food of the human population was drawn by J. King (Government Chemical Laboratory). In his opinion the Fertilizer and Feeding Stuffs Act of 1926 was an extremely enlightened piece of legislation pointing to the influence and ability of those who had the care of agricultural livestock at heart. Not only are exact standards laid down, but also the analytical methods to be used are stipulated in regulations under the Act. In the case of fraud or adulteration the Ministry of Agriculture can instigate criminal proceedings against the vendor, and the farmer can attack him in the civil court. Mr. King pointed out how difficult it is to lay down standards for a food fed to so many widely differing species; thus the husk or fibre content of a meal may be of no value to poultry, whereas more than sixty per cent may be available as carbohydrate to the species that can digest the cellulose. He went on to mention some of the difficulties in devising laboratory methods for such apparently simple procedures as the determination of water content. New methods suitable for materials containing volatile ingredients or those that are readily decomposed by heat are still being put forward. Since the advent of crystalline amino-acids, the venerable Kjeldahl method has been the subject of much closer examination, and its behaviour with different catalysts has been the subject of interesting study.

Dr. J. M. Barnes (Medical Research Council Toxicology Research Unit) named a few of the materials found in food to-day and outlined the experimental work that has been done in an attempt to assess their toxicity. He emphasized the difficulty of interpreting the results of experiments on animals in terms applicable to man. Any chemical added to food must be harmless to both young and old, and sick and healthy. The problem of the hypersensitive individual cannot be overlooked. The possibility that a new synthetic chemical may have carcinogenic properties must be remembered.

In general, a case against the use of most substances recommended for deliberate addition to

food does not rest on evidence of their toxicity as provided by laboratory experiments. Such consideration does not necessarily apply to more active materials, such as insecticides, that might find their way into food as the result of modern practices in the control of infestation, etc.

Dr. J. B. M. Coppock (Baking Industries Research Station) said that he would divide chemicals found in food into three categories: additives, processing aids and hygiene aids. As an example of each he mentioned glyceryl monostearate as an anti-staling agent for addition to bread, the use of silicones as pan glazes in baking, and the quaternary ammonium cationic detergents used for cleaning vessels employed in food production.

He stressed the need for more information on the toxic properties of all such materials, and mentioned that the ideal solution might be the setting up of a large institute where such testing might be carried out. He realized that, under prevailing economic conditions, this would be impracticable for many years. He thought that with existing scientific resources all substances that might be added deliberately or incidentally to food could be examined in the following way. An initial screening for acute toxicity would exclude all chemicals with obviously harmful properties, and for those passing this test a full investigation of their functional value should next be made. For purposes of comparison it is necessary to devise as many quantitative tests as possible. It is Dr. Coppock's opinion that the number of materials found to satisfy the first test and then shown to be significantly superior in function to materials already in use for the same purpose would be very small. At this point there is an urgent need for an advisory committee with powers to examine all the available evidence, and then pronounce whether or not a case has been made out for a new material to be recommended for use after it has been put through a thorough examination for absence of long-term toxic effects. Dr. Coppock believes that the work of examining those materials ever likely to be deemed worthy of such detailed investigation would be within the limits of existing resources in university or other laboratories.

Dr. Coppock concluded by emphasizing the need for a permitted list of materials that could be added to food. This point was taken up during the discussion, and the position in Great Britain was contrasted with other countries where such permitted lists are the basis of control over the addition of chemicals to food. In Britain only those substances that may *not* be added to food are listed.

OBITUARIES

Dr. G. M. Smith

ANGLO-AMERICAN co-operation in medical research has suffered a severe loss in the death, which occurred on February 26, of Dr. G. M. Smith, of Pine Orchard, Connecticut. George Milton Smith graduated A.B. (Yale) in 1901 and M.D. (Columbia) in 1905, and later became associate and associate professor of pathology in Washington University (St. Louis), where he worked during 1910-34. He then returned to Yale on appointment as medical director of the Anna Fuller Fund, which post he still retained at the time of his death. While in Yale he also acted as research associate in anatomy; of later years his

research interests lay mainly in the comparative pathology of tumours (on which he published in *Zoologica* and elsewhere), and in historical medicine.

However, Smith's greatest achievement undoubtedly rests in the advancement of medical research, not only in the United States but also elsewhere, which he was able to effect through the medium of the Anna Fuller Fund and as adviser to the Jane Coffin Childs Memorial Fund for Medical Research, with the directors of which (Stanhope Bayne-Jones and M. C. Winternitz) he worked to the end in close harmony and friendship. Much of this contribution lay in the field of cancer research, and he also acted as a member of the U.S. National Advisory Cancer Council during 1939-42. He was a devoted supporter of the Allied cause in the Second World War, and served as chairman of the National Research Council committee on armoured vehicles.

In George Smith we admired his intense loyalty to his country and to Yale (which conferred upon

him the honorary degree of LL.D. in 1947), his complete unselfishness, and his lasting belief in international co-operation in science and medicine. He was also able (and wont) to accompany his practical benefactions with the warmth of encouragement to a rare degree. His loss will be mourned, and his memory honoured, by a host of colleagues and friends the world over.

WE regret to announce the following deaths :

Prof. G. Denigès, *correspondant* of the Chemistry Section of the Paris Academy of Sciences, and honorary professor of the Faculty of Medicine and Pharmacy of the University of Bordeaux, on February 20, aged ninety-two.

Prof. G. A. R. Kon, F.R.S., professor of chemistry in the Chester Beatty Research Institute, London, on March 15, aged fifty-nine.

NEWS and VIEWS

Leather Industries at Leeds : Dr. D. Burton, M.B.E.

DR. DONALD BURTON, who has recently been appointed to the chair of leather industries in the University of Leeds in succession to the late Prof. W. R. Atkin, graduated at Leeds in 1914 with first-class honours in chemistry and gained his D.Sc. there in 1925. During the First World War he was assistant to the late Prof. J. W. Cobb, deputy inspector of high explosives (Leeds), and for his services, in the course of which he was seriously injured in an explosion, he was awarded the M.B.E. During 1920-25, Dr. Burton was head of the Leather Section of the C.W.S. Research Department at Manchester, and then was appointed head of the research and control laboratories of Messrs. Wm. Walker and Sons, of Bolton, where he has remained until now. Dr. Burton has had many years of lecturing experience at Bolton and at the College of Technology, Manchester, where he was responsible for initiating courses in leather chemistry. He is a member of many societies and other organizations relating to the leather industry, and, in recognition of his researches, the Society of Leather Chemists founded the Donald Burton Prize for original research; he is also the joint author of a book on "Sulphated Oils and Allied Products". During the Second World War, Dr. Burton was engaged in the production of leather for the Services, and in researches into the development of oil seals.

Applied Mechanics at Sheffield : Dr. W. A. Tuplin

FURTHER progress in the development of the newly established Postgraduate School of Applied Mechanics in the University of Sheffield is indicated by the recent appointment of Dr. W. A. Tuplin to the chair of applied mechanics. Dr. Tuplin was educated in the University of Manchester, where he was a Webb Scholar, and graduated in mechanical engineering. He is at present head of the Engineering Research and Development Department of the David Brown

Group of companies, with which he has long been associated. Dr. Tuplin is a specialist in problems of vibration and the design, manufacture and performance of power transmission appliances, and has published a large number of papers on these subjects. He is also the author of a book on "Torsional Vibration".

Atomic Energy in the Argentine

ON March 25, General Perón announced at a press conference that Dr. R. Richter, director of the Argentine atomic energy plant, had given a successful demonstration on February 16 of the controlled release of atomic energy by a thermonuclear process. He emphasized that the Argentine is interested only in the industrial exploitation of atomic energy. According to the statements which have appeared, an atomic energy plant has been erected on Huemul Island, which is in a lake near northern Patagonia, and attention has been concentrated on thermonuclear reactions as a source of atomic energy. These reactions,

Messrs. Macmillan regret to announce that, as from the issue dated July 7, the price of *Nature* will be 2s.

in contrast to nuclear fission—in which a heavy nucleus is broken up, with the release of energy, into two parts of the same order of mass—are a building-up process, in which, for example, hydrogen nuclei can be made to combine to form helium and perhaps larger nuclei, again with the release of enormous quantities of energy. Such processes are thought to provide some at least of the energy available in the sun, and hitherto it has been believed that extremely high temperatures are necessary to initiate them. No details are available about the work in the Argentine, apart from the somewhat negative information that the starting materials are easily obtained and less costly than hydrogen of mass 3. It is thus impossible, at the time of writing, to assess the importance of General Perón's announcement; Prof. M. L. E. Oliphant, the distinguished nuclear physicist and director of the School of Physical Sciences at the Australian National University,