WN *Column*

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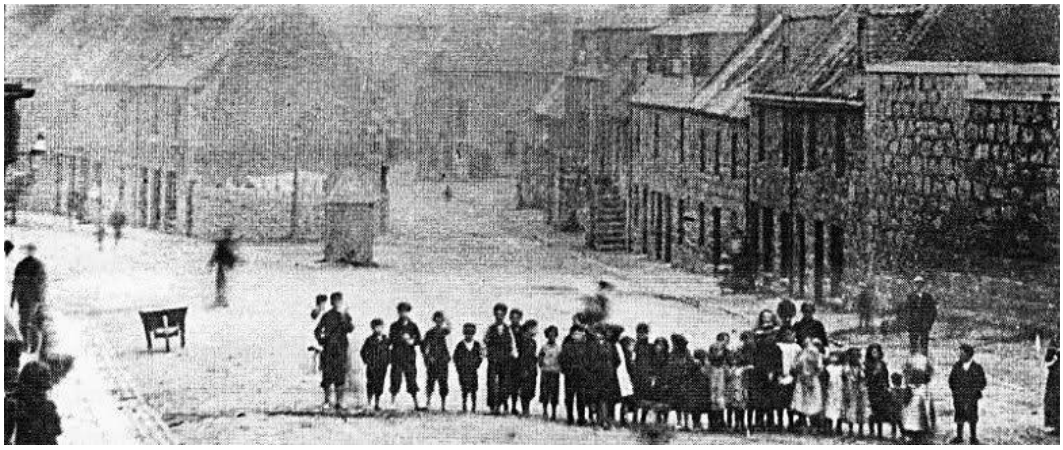
As I see it

Government for the people



Condition of the Scottish poor less than a century ago. Children of the slums, Skene Row, Hardweird, in Aberdeen. Picture was taken probably in the 1920s

Aberdeen, then London. Philip James writes

Last month's column was about food and nutrition policies in the WHO Eastern Mediterranean region (1). This month I consider the achievements of John Boyd Orr, founding director of the Rowett Research Institute near Aberdeen, of which I was the fourth director. The immediate occasion for reflection has been my visit to the Rowett to join in its Centenary celebrations. The Rowett is a leading European centre for animal and human nutrition research as the basis for agriculture, food and nutrition policy and practice. Boyd Orr, director from 1913 to 1945, was later Sir John, then Baron Boyd-Orr, winner of the 1949 Nobel Peace Prize for his advocacy of world nutrition and health (2), and often regarded as the greatest British nutrition scientist, policy-maker and activist of all time. Peace prize? Just after I came back to London, my colleague Francesco Branca, head of nutrition at WHO headquarters in

Geneva, gave the centenary Boyd Orr Lecture, sponsored by the UK Nutrition Society (2). As Francesco reminded his audience, on receipt of the Prize, Boyd Orr stated presciently 'There can be no peace in the world as long as a large proportion of the population lack the necessities of life, and believe that a change of the political and economic system will make these available. World peace must be based on world plenty'. Yes, indeed.

World agriculture, food and nutrition policy
What can we learn from history?

Recollecting the Institute's part in UK and international public health and nutrition policy, before and in my time as director between 1982 and 1999, gave me plenty of food for thought. As we sat at table I was reminded of my many discussions with David Lubbock, Boyd Orr's son-in-law, who worked closely with him in the 1930s. In the last decade of his life, David told me about the neglect of the working poor in the 1920s and 1930s in Britain, illustrated by the picture above of slum conditions in Aberdeen existing during Boyd Orr's time as Rowett director. These were not very different from those of Victorian Britain. He also told me of the decades-long battles led by Boyd Orr and fellow campaigners, with allies in parliament and elsewhere in public life, to improve public health through agriculture, food and nutrition reform.

So, more thoughts occurred to me. How can public health nutrition initiatives be successful? What progress has been made since Boyd Orr's day? So often we assume that what happened in history has few or even no lessons for us. How many British students of nutrition science could list three great achievements of Boyd Orr? This reminded me of the historical introduction I wrote for the standard UK textbook *Human Nutrition and Dietetics* 1993 edition (4), which indicates my own commitment to learning lessons from the past. Thus, where now is the impetus for agriculture, food, nutrition and health to be seen as parts of a greater whole? How can all relevant government departments be made to work together? What does it take to make government, industry, the professions and citizens unite in the public interest, as happened in Britain in the 1940s? What went right then? What's gone wrong now?

I also thought about my own childhood and early life. Born in Liverpool just before the 1939-1945 war, I grew up in Wales. This was the time of national reconstruction, and the establishment of the National Health Service, paid with taxpayers' money and free on demand. Despite big differences in many policies, all serious British political parties were dedicated in different ways to work towards fairer and healthier

societies, and this 'one nation' basic belief continued under right-wing and left-wing governments until the end of the 1970s.

Since then, so much has been compromised and even sabotaged, and the conditions of life in Britain continue to become less fair and less healthy. Britain will never return to the intense poverty and misery of a hundred years ago, but despite warm words, the commitment to 'one nation' has gone. Why? At best, we seem to be stuck. So what can we learn now from the times, life and work of John Boyd Orr? These were some of the thoughts that flooded into my mind during the grand Rowett Centenary dinner, as I listened to my successor the current director Peter Morgan highlighting the capacity of the Institute to adapt to new challenges and needs.

The Rowett Research Institute
The house that Boyd Orr built

John Boyd Orr; the entire staff of the Rowett in April 1922 (Boyd Orr front row, centre); and his devoted co-workers Isabella Leitch and David Lubbock

The Institute is named after John Quiller Rowett. He was a wine and spirits trader who prospered during the 1914-1918 war and who after the war donated money to buy 40 acres for the Rowett farm and also £10,000 cash for building work. Other benefactors have Institute buildings named after them.

Boyd Orr (1880-1971, left, above) was brought up in Ayrshire and educated in Glasgow, where he trained as a physician and physiologist. He gained a lifelong ambition to nourish and improve the condition of the people, a vision he shared with many British public health leaders, many Scottish. He served as a medical officer in the 1914-1918 war, was decorated MC and then DSO for his courage during the appalling carnage of the Somme and Passchendaele, and kept his men out of hospital and danger of infection by supplementing their diets with vegetables collected from local abandoned gardens and fields.

He was a charismatic leader among the group of nutrition scientists whose contribution to public health in the UK helped to lift millions of families out of desperate poverty. He inspired devotion from key colleagues, including Isabella Leitch (1890-1980, next to right, above), who joined the Rowett in 1923 at first as temporary librarian (5), as well as David Lubbock (1911-1992, right, above) who, having a private income, throughout his professional life worked without salary. Another colleague who turned out to be crucial in Boyd Orr's work was Walter Elliot (1888-1958), who also studied medicine at Glasgow University, became a member of parliament in 1918, and worked with Boyd Orr at the Rowett on large animal nutrition and metabolism. The two men remained close personal friends. Between 1932 and 1936 Elliot was a Cabinet Minister responsible for Agriculture, then Secretary of State for Scotland, and between 1938 and 1940 was Minister of Health.

Along with others such as Robert McCarrison, Jack Drummond and Hugh Sinclair, Boyd Orr was crucial in devising national agriculture, food and nutrition plans. These were approved personally by Prime Minister Winston Churchill, with Minister of Food from 1940 to 1943 Frederick Marquis (Lord Woolton) directly responsible, and the resulting vast national food and nutrition programmes sustained the country during the 1939-1945 war. The significance of two of his reports, *Food Health and Income*, and the Carnegie Survey (6,7) are described below.

National public health nutrition
Raising up a nation

Impact of industrialisation on Britain less than a century ago. Welsh children in the 1920s (left). Hunger marchers from Jarrow to London in 1936 (right)

In 1900 the average life expectation for a man in Britain was 47, for a woman 50, roughly the same as in the more impoverished African countries now. In 1950 average life expectancy was 20 years longer, at around 65 for men and 70 for women,

much the same as middle-income and many low-income countries in the global South now. Age at death is not the only sign of good health, but this great change, which included precipitate drops in infant and young child mortality in Britain, indicates the impact of enlightened public health policies. This was before vaccination for measles, mumps, whooping cough, poliomyelitis and immunisation schemes, and before antibiotics with their rapid impact on rheumatic and scarlet fever. The public health policies were actioned in very tough times, including during the mass unemployment, desperate poverty and 'Great Depression' of the late 1920s and 1930s illustrated above, and then the 1939-1945 war.

The story of the part played by the Rowett Research Institute, and Boyd Orr with his colleagues, in protecting the health of the British people, should be fully told. I can only touch on it here. The achievements then have profoundly important lessons for international and indeed global public health and nutrition now.

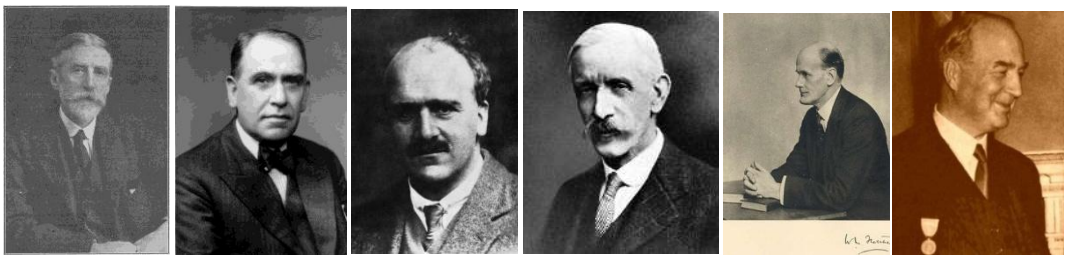
Why did the British nation degenerate?

The chief health and nutrition issues in Britain in the first half of the 1900s were much the same as they now are in Africa and Asia: malnutrition, deficiency, infection, especially of children. In 1901, just a decade before the foundation of the Rowett, *Poverty: A Study in Town Life* (8), compiled by the Quaker industrialist, sociologist and political activist Seebohm Rowntree, was published by the established house of Macmillan and Co. Its family directors, descended from Highland crofters (Scottish tenant co-operative farmers) in the island of Arran, near Ayrshire, were committed to reducing the imbalance in political and economic power and in the gross differences in the social conditions of society. For them public life meant duty to the public.

In *Poverty,* Rowntree wrote of impoverished communities in northern England: 'The wages paid for unskilled labour are insufficient to provide food, shelter, and clothing adequate to maintain a family of moderate size in a state of bare physical efficiency. A family... must never spend one penny on railway fare or omnibus. They must never go into the country unless they walk. They must never purchase a halfpenny newspaper or spend a penny to buy a ticket for a popular concert. They must write no letters to absent children, for they cannot afford to pay the postage'.

Here was a vivid example of the plight of the 'British stock'. The acute crisis actually had begun earlier, when the British were defeated in battles during the first Boer War of 1880-1881 in South Africa, and in the second Boer War of 1899-1902. This woke the British government up. The Empire lacked strong healthy fighting men. A fierce national debate ensued about the quality of the British working classes, the state of the nation's health, and what policies were needed, which continued into the 1930s.

The great nutrition debate



Boyd Orr's mentors Noel Paton, EP Cathcart (left); JBS Haldane; Frederick Gowland Hopkins; power-brokers Walter Fletcher, Edward Mellanby (right)

This controversy has lessons for us now. As always with great matters of public health, the issues were political. Boyd Orr's mentors at Glasgow University, Diarmid Noel Paton (1859-1928) and Edward Provan Cathcart (1877-1954), and also JBS Haldane (1892-1964) (pictured above), emphasised a holistic environmental approach to health. Paton came from a Scottish tradition of tough, rigorous discipline, so he also identified bad upbringing by ignorant and idle mothers as a basic cause of the poor nutrition and health of the people.

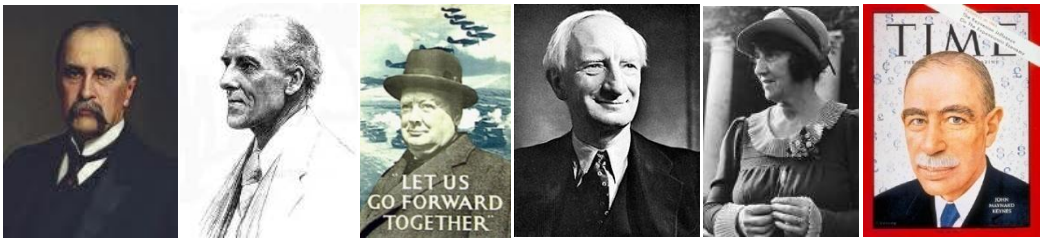
Selection and interpretation of the facts was largely determined by general ideology, as it always is. Others stated that impoverished families should not be insulted, that mothers knew very well what was good for their children but simply did not have enough money to buy adequate nourishing food. In the early 1920s, Harold Corry Mann of the UK Medical Research Council (the official body that continues to set medical and health agenda, commission research, and disburse grants) conducted feeding experiments on large numbers of children in an Essex orphanage, who were at risk of malnutrition as seen then. The exciting new science of nutrition was emerging, and the medical research establishment of Britain was deeply involved in these important discoveries and their implications for society.

Corry Mann's study concluded that adequate amounts of whole milk were essential for the proper growth of children, and that butter and sugar helped them to put on weight (9,10). Investigators in the US demonstrated that very small amounts of meat also helped to boost the height of children. These studies showed that environmental factors, including specific aspects of diet, and not simply genetics, retard children's increase in height and weight. So the stunting of the British working classes was not caused by the genetic deterioration of a more fertile sub-group of the population. ..

Walter Fletcher (1873-1933), and Edward Mellanby (1884-1955), the first Secretaries (in effect, the directors) of the Medical Research Council (pictured above) were more

interested in nutrients. They emphasised the newly discovered 'chemical' approach to health, known as 'the newer knowledge of nutrition', in effect promoting nutrition as a 'hard' biological science. They considered that it was essential to supply an appropriate amount of foods rich in the nutrients needed for the growth of children. The importance of these needs was at the time being amplified with the discovery of 'accessory food factors' or 'vital amines', later called vitamins, which won Nobel prizes for scientist such as Frederick Gowland Hopkins (pictured above), and with the identification of deficiency diseases. This concern seemed more than reasonable, since innovative small animal experiments often showed impaired growth in the absence of substantial amounts of protein and of some vitamins.

Weeding out the weak



Powerful voices for weeding our inferior types: William Osler, Karl Pearson, Winston Churchill, William Beveridge, Marie Stopes, John Maynard Keynes

In contrast, 'social Darwinist' believers in the brave new world view of eugenics were concerned to encourage 'the survival of the fittest' and to 'weed out' people and classes identified as inferior. Eugenics was a powerful movement in the first half of the last century. Following its founder Francis Galton (1922-1911), influential public figures who were champions of eugenics and who were active in Britain at a time contemporary with Boyd Orr, included (below, from left to right) William Osler, co-founder of the Johns Hopkins Medical School in the US, and later Regius Professor of Medicine at Oxford University (1849-1919); the statistician and founding father of biometrics Karl Pearson (1857-1936); Winston Churchill (1974-1965), recently voted the greatest Englishman ever; William Beveridge (1879-1963), mastermind of the postwar British 'welfare state'; Marie Stopes, champion of women's rights (1880-1958), and economist and philosopher John Maynard Keynes (1883-1946).

They and many other influential people believed that the stunted, often illiterate and seemingly dull-witted children of the British working classes were dwarfed and backward for genetic reasons, and worried that this 'inferior stock' was breeding so much faster than the intelligent educated socially responsible classes. Eminent scientists and other public figures proposed compulsory measures, of control and

even culling. The impact of their forceful views in the establishment at that time was considerable. Indeed, some were part of the establishment. Thus in 1912 Winston Churchill was recorded as saying of what became the Mental Deficiency Act of Parliament, designed to replace the Idiots Act of 1886, that: 'He himself had drafted the Act, which is to give power of shutting up people of weak intellect and so prevent their breeding. He thought it might be arranged to sterilise them. It was possible by means of Roentgen rays... The mentally deficient were much more prolific... Without something of the sort the race must decay. It was rapidly decaying, but could be stopped by such means' (11).

Boyd Orr's vision

So those who, like Boyd Orr, argued that the British people could be uplifted by public health and nutrition planning and action, had a lot going against them. The eugenic ideology was set aside only in the 1940s, when confronted with its implications in the form of the policies and actions of Hitler's Germany whose purpose was to eliminate 'inferior races'. The parallels in the views of the British eugenic movement and the German National Socialist (Nazi) approach are troubling even now, for at that time Hitler and his government were already persecuting and imprisoning Jews, gypsies, and also dissidents.

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Boyd Orr's genius lay in his vision of the essential unity of agriculture, food and nutrition, and the parallel need for government, industry and science to work together in the public interest. More than this: his training and contacts, his experience as a student of the slum conditions in Glasgow, his nurturing of his fellow soldiers in the trenches, and his responsibility for an institute responsible for animal as well as human health, all let him know that health is a matter not for one government department, or for one profession, but for many, working together.

He knew in his blood and bones what had gone wrong with the condition of the British 'lower classes', and also the significance of this as the next war approached. I found out why for myself in 1982, during my very first weekend in Aberdeen as Rowett director.

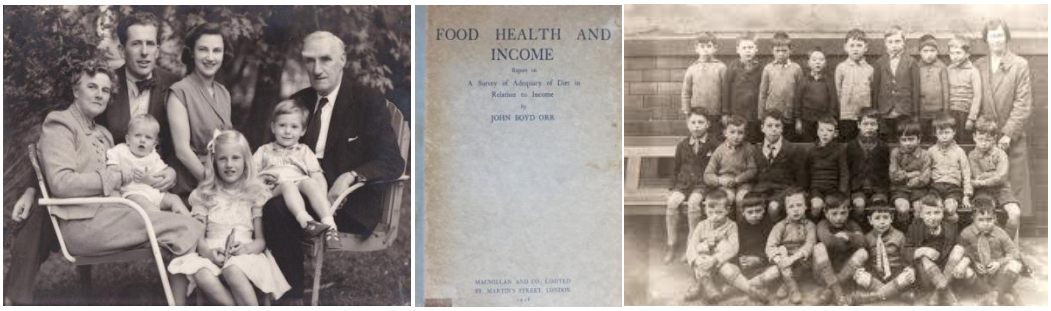
I was invited by Lady Aberdeen to visit her in her magnificent Hall and estate north of the city. There I met the Colonel of the Gordon Highlanders regiment. A few days later he taught me a lesson that Boyd Orr, with his experience as a student of the slums of Glasgow, would always have known. This takes the story even further back to early in the previous century, and industrialisation. The colonel took me to the regimental headquarters and showed me that young Highland Scotsmen in the 1840s, before industrialism hit Scotland full force, were on average close to 6 foot tall, and

many were taller. On their simple traditional diet, oats-based together with green and root vegetables, plenty of fish especially salmon, modest amounts of meat, and milk, young Scots country men were strong and healthy, and became the backbone of the British army building the British Empire all over the world.

Then as he explained, everything changed. English and Lowland Scottish industrialists and landlords, often with the connivance of the Highland lairds, forced the Scottish working class farm tenants off their land, for the landowners made more money by grazing sheep on hills rather than receiving annual payments or portions of crops from the tenants. Farmers were forced into the slums of Glasgow, Dundee, Edinburgh and Aberdeen, or else emigrated, mostly to Canada and the USA (12).

By the time of the second Boer War of 1899-1902, and also the 1914-1918 war, up to half of all recruits had to be rejected. They had become on average 6 or more inches (12 centimetres) shorter, and were often scrawny. They could not carry the 45 pound (20 kilogram) pack plus rifle and ammunition over typical infantry terrain that their predecessors a century before had traversed with ease. Here was the fundamental cause of the British armies' defeats in South Africa. Britain was in trouble, and senior politicians in and out of government knew it. Here was Boyd Orr's springboard.

Food Health and Income, and the Carnegie survey
Preparing to endure the 1939-1945 war



Boyd Orr, David Lubbock and their families in the 1930s; Food Health and Income; and what this was all about – children of the Glasgow Gorbals slum

Boyd Orr cut an impressive figure in the mid-1930s. Sir John Orr, as he had become, mingled with the mighty and had himself become a mighty man. Now for the story of his most impressive work in Britain. This was exemplified by his report *Food Health and Income* (6) illustrated above; *Feeding the Nation in War-Time* (7) with David Lubbock listed as co-author, and the later 'Carnegie' survey (13).

Food Health and Income

When it was published, *Food Health and Income* caused a national sensation. It responded to requests from industry for information. Originally requested by Walter Elliot, who then (as mentioned above) was in the Cabinet as Minister of Agriculture, it lost official status because of its scope and style, and had to be published privately.

It claimed, with the use of vivid graphs, that the nutritional status of the British people was all about income. The more money families had, the more fresh milk they drank, and the taller the children and adults. The less money, the more tinned condensed milk (with indefinite shelf life in larders) they consumed, and the lower their heights and weights. The more income people had, the more butter consumed; the less money, the more hard, unfortified margarine (also with its long shelf life).

Consumption of meat, fish and eggs was also a function of income, as was consumption of vegetables (excluding potatoes) and fruit, and also therefore of various vitamins and essential minerals. Impoverished families mainly consumed 'cheap satisfiers of hunger, eg potatoes, bread, margarine' and 'the evil effects of poor diet are accentuated in children'. Half the report was statistical and other appendices, for which Isabella Leitch had special responsibility. The general conclusion was that the diet of half the population was inadequate, and that the driving force was income. This was dynamite. The political and economic implications were immense. Government officials were not happy.

Boyd Orr's reputation, and the general apprehension of another great war, partly accounted for the report's impact. These were not the only reasons. David Lubbock told me that through his own close family links with the family of Herbert Asquith, UK prime minister during the early part of the 1914-1918 war, he had done a deal with the publishing house of Macmillan and Co, publisher of Seebohm Rowntree's report a generation previously. This was a clever: the report would have been seen as Labour propaganda if issued by some Socialist publisher like Victor Gollancz.

Boyd Orr then made another adroit move. Once publication date was fixed, he arranged that neither he nor David Lubbock would be available to the press for several days – they went on holiday in the Scottish Highlands, as David told me many years later. So on publication the report was not seen as a subjective personal mission and ambition of Boyd Orr, but as an objective pressing issue for the nation.

The radical and disturbing findings, recommendations and implications of the report became central to a series of powerful debates in the House of Commons on malnutrition (14). At the time the government was dominated by Conservatives led

by Stanley Baldwin, and the recommendations and implications of *Food Health and Income* were voted down. But members of the government were disturbed. Among them was a young back-bench 'one nation' Conservative member of parliament, who like Boyd Orr had served at the Somme, where he was seriously wounded. After the war he represented the northern working class constituency of Stockton-on-Tees, and was committed to protect the interests of impoverished communities including men who like him had suffered trench warfare. This was Harold Macmillan, a director of Macmillan and Co, who had discussed the report as it was prepared with Boyd Orr and David Lubbock. (Twenty years later he became UK prime minister).

Sir John Orr (as he now was) and others were shaping a great national debate, on three inter-related issues. One was poverty: the evidence that the ill-health of the 'lower classes' was caused by malnutrition whose basic cause was inadequate income. Two was war: the fear that a second great war was coming, that the nation needed strong young people, and that the governments of Adolf Hitler and Benito Mussolini were making sure that the people of Germany and Italy were fed well.

Boyd Orr's war on British malnutrition was not won by a single battle. *Food Health and Income* was criticised as weak science and poor reasoning by much of the medical and scientific establishment. In a second edition published the next year (6), also by Macmillan and Co, Boyd Orr responded with controlled fury. 'If children of the three lower groups were reared for profit like young farm stock, giving them a diet below the requirements for health would be financially unsound' he thundered. 'Unfortunately the health and fitness of the rising generation are not marketable commodities which can be assessed in terms of money'.

He also wrote magisterially, as a national leader. 'It remains, however, to adjust our food policy so that the great wealth of food which we have or can produce will be brought within the purchasing power of the poorest. This is no easy task. It will require economic statesmanship of the highest order'.

The Carnegie Survey

But having been challenged, Boyd Orr dug in, and strengthened the basis of his conclusions with original research. I became vividly aware of this further work in my time at the Rowett when a young student came to see me and asked to gain access to some of our records from the pre-war years. These were the records of the 1937-1939 'Carnegie' survey of the diet, stature and health of a very large representative sample of families from all over Britain. I was delighted to help, and Elizabeth Celia Petty then produced a marvellous PhD thesis (15), later converted into a book.

The Carnegie survey, supervised largely by Isabella Leitch, confirmed that the poorer children were in the city slums, the shorter and thinner and more anaemic they were. Porridge and other foods made from (whole) oats were absent. Their diets were dominated by the cheapest forms of bread with unfortified margarine. Fresh fruits and vegetables were rarely eaten and most milk was in the form of whey – the remnant of milk that remained after butter and cheese had been made.

The survey was also explosive in its implications. What had changed though, was not so much the strengthened science, but increased awareness of the coming war. So its messages had to be got across, urgently, to revolutionise agriculture, food and nutrition policies, and indeed national economic priorities. The crisis was as acute as that of sluggish increases in production of aircraft. Young men were needed to fight a land war. Men and women needed to be fit for work on the home front. It was known in government that Germany had lost the 1914-1918 not because its armies were defeated, but because the German civilian population was close to starvation.

Told later to me by David Lubbock, this was enthralling stuff. He and Boyd Orr pulled out all the stops and used all their connections. David went to see key government officials in London, to ask how Britain could endure a coming war, when two-thirds of British food was then imported from the Empire, and thus vulnerable to German blockades and submarine U-boat attacks.

There he discovered that while the government's Board of Trade, the responsible ministry, had a plan for food rationing, using ration books with strict allocations of types of food, it proposed to allow all those with money to buy as much meat and butter as they liked. David was appalled and telegrammed Boyd Orr in Aberdeen to catch the night train to London and Whitehall with the Carnegie data on the nutrition and health of the poorer populations throughout Britain. But the officials were not 'minded' (as officials still say) to change. They said that in a war there would not be enough meat and butter for the whole population, and consumption would have to be determined by (as is said now) 'the market'. As the song sung by soldiers in the 1914-1918 war went: 'It's the same the whole world over/ It's the poor what gets the blame/ It's the rich what gets the gravy/ Ain't it all a bleeding shame'

Then the tide turned. Walter Elliot, now Minister of Health, was fully informed. Britain declared war on Germany on 3 September 1939. The very next day on 4 September the Ministry of Food was established (as it had been in the 1914-1918 war) and eventually employed 15,000 people. On 10 May 1940 Winston Churchill become Prime Minister and greatly strengthened the position of newly appointed Food Minister Lord Woolton, a successful businessman brought into government as an action man who got things done, which he did.

Woolton and the Pie

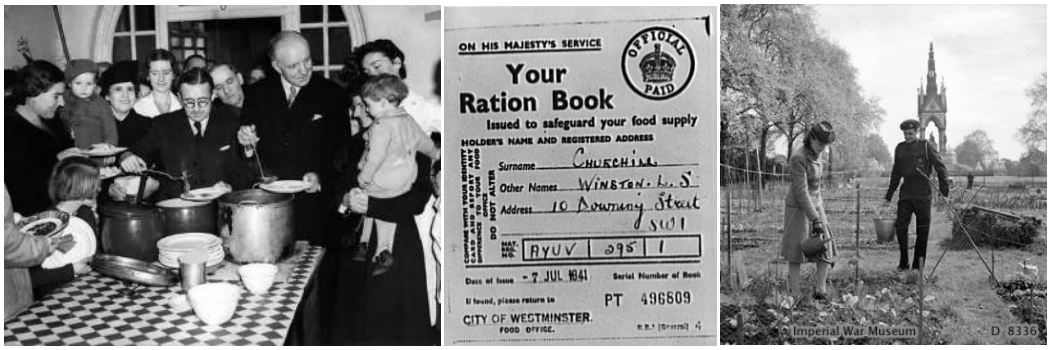
Lord Woolton, wartime Minister of Food (left); and the 'Woolton Pie' made mostly from vegetables (centre) with (right) its recipe printed in The Times

Now the game was for those with vision. Boyd Orr – and others – told Woolton, other ministers, and all the officials they knew, that Hitler's Germany was liable to win the war by forcing British nutritional deterioration and collapse of the civilian workforce. This was not fanciful, as all who knew the facts of the fate of Germany in and after 1918 was well aware. Woolton briefed Churchill, who as a Cabinet Minister at the time knew all the secrets of the previous war. The ministries of Food, Health and Agriculture, and others, were given unique powers including over necessary employment, land requisition, propaganda, and trade, and influence on broadcasting. Later, in his preface to the Carnegie survey when published, Woolton wrote (13): I was charged with the task of feeding a nation... I decided to try to develop a food policy based on the scientific knowledge of those engaged in the study of nutrition and biochemistry... People began to give as much thought to the consideration of food, as the skilled engineer affords to the feeding of his engines'. Peter Medawar, Nobel Prizewinner for Medicine, judges this as 'the best single example known to me of synergy between science and government' (16).

This is how Boyd Orr and his colleagues set the agenda of the British wartime food and nutrition policy and actions. These were conducted in phenomenal detail, right down to the creation by François Latry, head chef at the Savoy Hotel, of 'Woolton Pie' (above), using wholemeal bread as crust, and filled with vegetables that the population was encouraged to grow at home and in allotments.

Woolton's genius included the common touch as a practical man. Although a natural Conservative, he spoke and acted like a Socialist. He enjoyed verses such as 'Those who have the will to win, /Cook potatoes in their skin, /Knowing that the sight of peelings,/ Deeply hurts Lord Woolton's feelings'. He is pictured below (left) serving food in a Sussex mobile field kitchen. Winston Churchill was issued a ration book

just like every other citizen. (Whether he used it is another matter). Allotments were dug on all available land, including London parks. The women of Britain were all mobilised for the war effort. They included the young elder daughter of the King, now Queen Elizabeth, who nearly 70 years ago now was a member of the Auxiliary Territorial Service helping to maintain ambulances and light trucks.



Everybody joined in. Lord Woolton serving food (left). Winston Churchill's ration book (centre). A London allotment next to the Albert Memorial (right)

From the point of view of health, the British wartime diet was the best there has ever been, before – and in many ways, since. Hugh Sinclair and his team based in Oxford tackled crises of scarce supplies of food as an index of dietary adequacy. One of his workers was the dietitian Phyllis Williams, who I encountered shortly after the war as the school housekeeper at Ackworth, my secondary boarding school.

Everybody was able to have enough to eat. The almost universally available and affordable diets were healthy. Much urban land was turned into allotments and market gardens, so consumption of vegetables and fruits increased. Young children received free cod-liver oil (for vitamin A), concentrated orange juice (for vitamin C), and a third of a pint of whole milk. Sweets were rationed. Rates of death of infants and young children dropped. Obesity, unusual at that time, became rare. Rates of diabetes dropped, as did those of tooth decay and anaemia (17). Britain survived the first years of the war. After entry of the US, Hitler's Germany was defeated.

Without the work of Boyd Orr and the other champions of public health nutrition in the 1930s, the history of Britain might have been very different, politically, economically, and also socially. Churchill's dictatorial powers as head of an all-party government, fighting a war of national survival, and his giving sweeping authority to swashbuckling industrialists and scientists whose style appealed to him and who otherwise would never been interested in politics, transformed the governance of Britain. Ironically for Churchill, this made election of a socialist government with a landslide victory inevitable after the war.

World health, hunger, and peace

Learning from Boyd Orr

Outcomes of Food Health and Income: the UK wartime agriculture, food and nutrition policy, involving the whole nation, as envisioned by John Boyd Orr

This brings me to the end of this short story of the Rowett Research Institute in its first period, between 1913 and 1945.

What should we learn from all this now? Here are some of my views. They are not just a result of my visit to Aberdeen! They have grown from my two decades as Rowett director, working with Scotland's politicians, civil servants and farmers to improve the health and welfare of the Scottish nation. They came also from my experience from before then until now, working with leaders within the United Nations and its agencies, many national governments, fellow scientists, civil society organisations, and yes, big farm owners and food manufacturers.

The world we live in now is in obvious respects very different from that of 100 or 50 years ago. But it's clear to me that our world crisis now, showing itself most obviously not so much in 'classic' deficiencies as in the new form of malnutrition – obesity and diabetes in particular – can be effectively addressed only in John Boyd Orr's way. This requires all concerned to work together. But today we face globalised opposition to our aims to protect and improve public health and nutrition. We face a dominant political and economic ideology that is locked into a way of thinking that by its nature magnifies the inequalities within nations. In effect it is opposed to any reasonable view of justice in the dealings between rich and powerful states and corporations. This ideology blocks all those at all levels who struggle to advocate and implement policies and actions that are in the public interest.

Like John Boyd Orr, we need to have the wisdom and courage to know who are or can be our allies, and who may be or are bound to be the enemies of public health.

For example, the UN Framework Convention on Tobacco Control, with all it stands for, has protected the health of hundreds of millions of people. But it was not agreed by the UN with the blessing of the tobacco industry. By analogy, I am bound to say that it seems unlikely that we will be able to achieve a new world in which alcohol consumption is controlled and in which healthy food choices are the easy choices, with the support of what are now the biggest and most powerful food and drink product manufacturers.

In our and allied professions, we need leaders with the focused energy of Boyd Orr, who are entrepreneurs as well as researchers. We also need a younger generation who, like Isabella Leitch and David Lubbock, are inspired to prove that a healthy world is possible, and who produce devastating information that will energise and inspire the people in power. Judging from the story of Boyd Orr, we also need friends in high places.

I have one abiding worry. Does it always take a war, or some equivalent catastrophe, to wake us all up?

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Status

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