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EDITORIAL

One message or many?

Conventional wisdom has it – and on the whole I agree – that messages to persuade, should avoid complexity, and be kept as simple as possible, dealing with one issue at a time. On the other hand, my wife and I were pondering meat consumption recently. From the McCarrison Society's point of view, the main issue I think is that meat should come from animals or birds raised on traditional farms under healthy conditions, and in the case of beef or lamb, fed on pastures untreated with artificial fertilizers or pesticides. (The same principles also apply to fish of course.)

Yet there are other equally pressing concerns. Is it productive or counter-productive to mention them? Here are a few, and you will probably have other concerns too. For example –

1: Many people (although not, I'm sure, McCarrison Society members) simply eat too much of it. Neither fat nor red meat appears to be particularly healthy when eaten to excess, groups such as the Esquimaux notwithstanding.

2: Suitable livestock is a very efficient way of using rough and semi-wild upland areas to produce food, but is less so on land suitable for crops.

3: If fertile grazing land is created by forest clearance, whether for animals or crops like soya, this renders the forthcoming struggle to stabilise and then reduce the concentration of 'greenhouse gases' in the atmosphere, all the more difficult. Furthermore, the fertility of such virgin land has been reported to decline pretty quickly.

4: Industrialised farming methods, in theory need not – but too often do – lead to indifference, callousness and a lack of empathy with the creatures we subject to miserable lives and sometimes a terrible death. This factor alone has been a prominent element in my own thinking, long before nutrition and other matters came into question, and I was glad to find that Richard Holloway (prolific author, and erstwhile Primus of the Scottish Episcopal Church) feels the same way.

I admit that it is easier for me than for some, to accept these arguments. I am not a vegetarian, but would not be unduly distressed if I had to be. I enjoy meat in quite modest quantities, and accept that humans have evolved as omnivores. It is of course a fallacious kind of argument, but nevertheless it's amusing (perhaps, over a bottle of wine) – to speculate that since, once beyond infancy, we start out with a set of 32 adult teeth, only four of which are canine teeth, might $4/32 = 12.5\%$ represent an approximate optimum proportion of meat in the diet that best suits us? A spurious coincidence I suspect, but one I shall keep hold of while I tuck into the much larger pile of delicious vegetables on my dinner plate.

Edward Kirby

MANAGED GRASSLAND

American farmer Joel Salatin, who runs Polyface Farm in the Shenandoah Valley in Virginia, has worked out a way to use his pastures to maximum benefit both for his farm animals and his own profit. The farm is hugely successful because Salatin adheres strictly to a cycle which occurs naturally.

He observed that in nature you will always find birds following herbivores; the egret on the rhino's back, the pheasants trailing after the bison, forming a symbiotic relationship which he tries to emulate on his farm. In each case the birds feed on the insects that bother the herbivores and pick larvae and parasites out of their droppings, thereby breaking the cycle of infestation and disease.

Three days after Salatin has moved his cattle to fresh pasture he brings in his hens. The hens will not feed while the manure is fresh but if left for three or four days, and not a day longer, this gives the fly larvae, which are on a four day cycle, time to turn into grubs and to fatten up but not long enough to turn into flies. This is just what the hens love and in return the grubs provide them with a prodigious amount of protein in their diet. By means of this simple method of grass management Joel is able to use the waste from his cattle to make large quantities of high protein chicken feed for free.

Reference: The Omnivore's Dilemma by Michael Pollan. ISBN 978-0-7475-8683-8

TALK BY GRAHAM HARVEY ON FARMING AND HEALTH.



As a farming journalist my interest has been, and still is, principally in agriculture. I know that Sir Robert

McCarrison, as well as being a doctor, was, himself, very much concerned with agriculture and the way food was produced. So, in the spirit of that great man I'm going to share my views about ill health and the dietary reasons for it; how I think the state, nutritionists and – dare I say it – the medical establishment perpetuate many aspects of ill health; and how I think a revolution in the way we practice agriculture offers the best hope of a remedy.

You don't need me to tell you that, despite all the marvels of modern medicine, we in the UK are a very sick society. You know the conditions I'm referring to – the so-called diseases of civilisation – diabetes, heart disease, cancers, and the condition that is a precursor to so many of them, obesity. I gather the latest diabetes figures for

Scotland show 200,000 sufferers, 4.1 per cent of the population. This, in a society that is among the wealthiest in human history.

CONSUMERS NOT ENTIRELY TO BLAME

We are led to believe that we as consumers are to blame. We make the wrong food choices. We eat too much saturated fat. We consume too many calories and don't take enough exercise. Earlier this year the Food Standards Agency launched another campaign to get us to eat less saturated fat. By implication, this means substituting skimmed or semi-skimmed milk for whole milk; substituting a low-fat vegetable oil spread for butter. The FSA ran its own advertisements over two or three weeks, then the Flora margarine company jumped on the band-wagon with its own full-page Big Fat Lie advertisements. Recently I watched Professor Regan's Diet Clinic on BBC2 which was supposed to shine the bright light of scientific rigour on some of today's commercial slimming diets. We were introduced to a

leading research nutritionist who told us the "truth" about obesity. It's all a question of calories consumed exceeding calories lost through exercise, we were told. In other words it's all our fault. But are these official messages really scientific?

CAUSES OF OBESITY

In his book *The Nutrition Delusion*, American science writer Gary Taubes says, "Dietary fat, whether saturated or not, is not the cause of obesity, heart disease or any other chronic disease in civilization. The problem is carbohydrates – particularly the refined variety – and their effect on insulin secretion and the whole hormonal regulation of the body. Through their direct effect on insulin and blood sugar, refined carbohydrates, starches and sugars are the dietary cause of coronary heart disease and diabetes. They are the most likely cause of cancer, Alzheimer's and other chronic diseases of civilization. Consuming excess calories does not cause us to grow fatter any more than it causes a child to grow taller. Obesity is caused by an imbalance in the hormonal regulation of fat tissue in which insulin is the chief regulator. By stimulating insulin secretion, carbohydrates make us fat and ultimately cause obesity."

OMEGA FATS

There are other theories about the cause of modern degenerative diseases but one I know you are familiar with in this society is the changed composition of the fats in our diet. We are consuming too few omega-3 polyunsaturated fatty acids with dire effect on cell wall structure and the immune system. This leads to the kind of conditions we've been talking about – diabetes, metabolic syndrome, heart disease and nervous disorders. In my book *The Carbon Fields* I discuss Susan Allport's contribution to this debate – how seasonal changes in the omega-6/omega-3 ratio in diets prepared early humans for the seasonal changes from summer to winter. As in the case of saturated fat/heart disease, these remain theories. What is required from science is the kind of definitive, randomised-control trials that should have been done with saturated fat, and, according to Gary Taubes, were not. There were plenty of eminent scientists warning that the real nutritional bombshell was refined carbohydrates, but apparently to voice them once the saturated fat theory had been elevated to "holy writ" was to sacrifice your career as a clinical nutritionist.

THE SACCHARINE DISEASE

You'll know better than I how Surgeon-Captain T. L. Cleave was disparaged for arguing that all chronic diseases of Western societies could be ascribed to refined carbohydrates, or what he called the *saccharine* disease. In fact it was Dr Walter Yellowlees' book, *Doctor in the Wilderness*, that moved on my own thinking from the environmental damage of western industrial agriculture to its effect on human health.

RETURN TO TRADITIONAL FOOD

So what we have had are 40 years of propaganda from an unholy alliance of nutrition experts and the food industry telling us the traditional foods that people have eaten for generations are unhealthy. I'm talking about nutrient-rich foods like meat, milk and dairy products, eggs and so on, foods that when I was growing up were known as protective foods. Instead we've all been goaded into low-fat diets and by implication into eating more carbohydrates, the very foods that cause the problem. So what should we be eating while we wait for science to define at last what is a healthy diet? In my view we need to go back to the time before the fat-fad came into ascendancy. There were plenty

of voices urging us to eat and enjoy the traditional foods of the countryside, notably Sir Robert McCarrison.

OBSERVATIONS MADE BY WESTON PRICE

One of the most remarkable studies on the link between food and health was carried out by the American dentist, Weston A. Price, who ran a thriving dental practice in the industrial city of Cleveland, Ohio in the early years of the 20th century. He had taught at American dental schools, but his overriding interest was in nutrition and its affect on human health. At that time the people of Cleveland were abandoning their traditional diets in favour of the new, manufactured foods – white bread, margarine, pasteurised milk, and refined white sugar. Price saw the results daily in his surgery. Most of his adult patients had rampant tooth decay, often accompanied by degenerative diseases such as arthritis, osteoporosis, diabetes and chronic fatigue. The health of younger patients was even more worrying. Their teeth were often crowded and crooked. Many had facial deformities such as 'overbites' and narrow, pinched faces with no well-defined cheekbones. The same children frequently suffered from other health complaints that

sound all too familiar today – allergies, recurring infections, anaemia, asthma and behavioural difficulties. All these had been rare when Price started in practice around the turn of the century.

THE WHITE SCOURGE

One of the more serious infectious diseases of the day was tuberculosis, widely known as the 'White Scourge'. Price observed that children were increasingly afflicted by the disease, and among the most vulnerable youngsters were those with bad teeth. That is when he hit on the idea of travelling to the most remote parts of the world where the inhabitants had not yet been 'touched' by civilization and its processed foods. He gave up his practice, and – in company with his wife – set out on the journeys of discovery that were to preoccupy him for the next ten years.

REMARKABLE HEALTH IN SWISS VALLEYS

One of the couple's first visits was to a secluded valley high in the Swiss Alps. Until the building of an eleven mile long railway tunnel a few years earlier, the Loetschental Valley in the Bernese Oberland had been virtually isolated from the outside world. There, Price was astonished to find children tough enough to walk barefoot in

freezing mountain streams without ill effects. These children seldom caught colds, and infections were virtually unknown. No case of tuberculosis had ever been seen among the valley community, though the people had been exposed to the bacillus. The children's teeth and gums were in perfect condition, Price discovered, with no sign of dental decay. The people of this Swiss valley lived mainly on unpasteurised milk and dairy products from their own cows that grazed on the steep mountain pastures. Especially valued was the yellow butter made from the milk produced on these Alpine grasslands.

The diets of other communities visited by the American couple were very different but equally nutritious. On the Isle of Lewis off the north-west coast of Scotland the local people lived mainly on cod and other sea foods, especially shell fish. These were supplemented with oatmeal. On the thin island soils oats were the only grain that could be grown. A prized local dish – considered especially beneficial for growing children and pregnant women – was cod's head stuffed with oats and mashed fish liver. Price visited a number of Scottish islands and discovered that when people were on traditional diets they

were healthy and free of tooth decay. However in seaports such as Stornoway foods like white flour, sugar, sweets and tinned vegetables were being imported from the mainland. There, tooth decay was rampant among children and so was a reduced immunity to TB.

Price also visited Inuit or Eskimo people, whose diet included fish, walrus, seal and other marine mammals. During the brief summer months the people would gather nuts, berries and a few grasses. These provided small diversions in a diet made up overwhelmingly of animal products, including large amounts of blubber.

Of the African peoples he visited, Price found the Dinkas of Sudan to be the most healthy. They ate a combination of fermented grains and fish, together with small amounts of red meat, vegetables and fruit. By contrast, cattle-herding tribes like the Masai ate no plants at all. They lived exclusively on beef, raw milk, offal meats, and – in times of drought – blood. The Cleveland couple visited tribes of hunter-gatherers in Northern Canada, the Florida Everglades, the Amazon rainforest and Australia. These people consumed game meats of all types, especially offal but they supplemented them with a

variety of whole grains, vegetables and fruits.

Wherever he went Price found these remote peoples to be in excellent health. The foods they ate were, without exception, natural and unprocessed. There were no preservatives, colourings or additives; no refined oils or hydrogenated fats, no processed foods such as white flour or skimmed milk. Nor was there added sugar, though a number of peoples ate naturally sweet foods such as honey or maple syrup. All the foods were grown or raised on fertile soils, uncontaminated with pesticides or chemical fertilizers. Milk and dairy products were always consumed in their raw or unpasteurised state.

COMPARISON OF NATURAL DIETS

Price collected samples of local food wherever he travelled. Carefully preserving them, he brought them back to Cleveland. He wanted to find out whether such diverse natural diets had any common attributes that might account for the robust good health of those remote communities. In his laboratory he made detailed analyses of each sample, calculating its total complement of nutrients. From the full set of figures he was able to calculate the nutrient intake of each community. The results

amazed him. Though the diets were very different, they all had common features. For example, they all contained high levels of saturated fats. The analyses also showed that these health-giving diets contained at least four times the level of minerals and water-soluble vitamins - vitamins C and B-complex - of the average American diet of his day. And they contained no less than 10 times the levels of fat-soluble vitamins, including vitamins A and D, together with a new nutrient he called 'activator X'.

FAT-SOLUBLE VITAMINS VITAL FOR GOOD HEALTH

When he published his findings in his book *Nutrition and Physical Degeneration* in 1945, it went largely unnoticed. Today it is attracting considerably more attention, in part because its findings run counter to many modern tenets on healthy eating. Price considered fat-soluble vitamins to be the key component of healthy diets. He called them 'activators'. They were vital for the assimilation of all other nutrients in the diet - protein, minerals and water-soluble vitamins. *"It is possible to starve for minerals that are abundant in the foods eaten because they cannot be utilized without an adequate quantity of the fat-soluble activators,"* wrote

Price. *"The amounts utilized depend directly on the presence of other substances, particularly the fat-soluble vitamins".*

FOLLY OF DRINKING SKIMMED MILK

It is at this point, probably, that the greatest breakdown in our modern diet takes place, namely in the ingestion and utilization of adequate amounts of the special activating substances, including the vitamins, needed for rendering the minerals in the food available to the human system. In the light of this does it make sense to drink skimmed or semi-skimmed milk, throwing away the fat with all its vitamins and protective nutrients?

Ironically the foods supplying the vital fat-soluble activators are those mostly missing from the modern British diet. They include butterfat, fish oil, offal meats, fish and shellfish, and tallow - the harder kinds of animal fat. Price's 'activator X', a powerful catalyst to mineral absorption, occurred in foods considered sacred in many primitive societies. They included liver and other offal meats, fish liver oils, fish eggs and butter from cows grazing on rapidly growing spring and autumn grass. At a time when many of these foods have fallen from favour, the toll of degenerative diseases has risen inexorably. Here was the reason

for the legendary health and stamina of these remote peoples. Their staple foods – whether from the sea or from the land – were highly mineralised and rich in antioxidants. They were eaten mainly as whole foods, unprocessed, and here was the reason for the rising ill health in Price's city of Cleveland. The people's diets had been debased by the substitution of industrial foods for the natural foods of the countryside.

I M P O R T A N C E O F T R A D I T I O N A L F O O D

Price's work has been neglected for decades, but thanks to Washington based Sally Fallon it is now being looked at afresh. Fallon co-founded the Weston Price Foundation with nutritionist Mary G. Enig, promoting nutrient-dense foods and the health benefits they bring. The foundation also looks at the science behind traditional ways of preparing food that invariably enhanced its nutritional value unlike many modern processing techniques that often reduce the nutritional value of foods.

Sadly, the traditional foods that Weston Price considered so vital for human health play a much-reduced role in the average British diet today. This is partly because of the cloud of suspicion that today's diet police have surrounded them with but it is

also because of changes that have taken place in agriculture.

R U I N O U S R E S U L T O F C A P

I want now to talk about farming and the revolution that has occurred since I started writing about it in the early '70s. This is the time, you will remember, when traditional foods such as meat and dairy products were coming under fire from the anti-fat campaigners. It was also the time when Britain entered the EU and came under the notorious Common Agricultural Policy. It pains me to say this as a strong Europhile, but I believe the CAP has ruined our farming and robbed the people of our country of their rightful heritage - decent food. It used to annoy me when I watched all the political games to do with saving the British pound. When were people going to march on the streets to save our food and our farming, which were much more precious? The fact that there was no sustained campaign against the CAP is testament, in my view, to the power of the land-owning lobby that made huge capital gains from our EU entry.

B E N E F I T S O F M I X E D F A R M I N G

In brief when we went into the EU British farming, at least on the lowlands, was based on the mixed farm. This is the farm that has both livestock and food crops

such as wheat and barley. There are many benefits to this system. The most important is that it includes grazing pasture in the crop rotation. This means essentially that cattle and sheep graze grass – it sounds obvious but it's far from universal today. When ruminant animals graze grass, their natural food, there are many health benefits in the meat and dairy foods they produce. There are also benefits for the foods crops, the wheat and barley and so on, that will be grown on this land once the grass has been ploughed up. The grass ley puts organic matter into the soil and improves the biological life of the soil. This assists in the uptake of trace elements from the soil, so that the resulting cereal crop is rich in minerals. Tragically under the subsidy system of the CAP this benign and healthy farming pattern broke down. Under the generous cereal subsidies many lowland farmers found it more profitable to get rid of their livestock and re-invent themselves as specialist arable farmers. Under the generous subsidies they were able to afford



The signature of the chemical company!

the huge inputs of chemical fertilizers and pesticides you need to run the system.

DIRE EFFECTS OF CHEMICAL FARMING

In the decades following EU entry our wheat acreage doubled – so did the yields per hectare so long as the farmer spent thousand of pounds on chemicals. With the aid of all these inputs Britain now produces a huge surplus of cereals, nearly half of which are fed to animals. This means it is now more profitable to feed animals – including ruminant animals – on grain than to graze

them on grass as nature intended. Not only is this unhealthy for the animals, but it greatly reduces the nutritional value of the food. For example, beef from grazing animals has far lower levels of fat than beef from grain-fed animals. It has more antioxidants including vitamin E and beta carotene, a precursor of vitamin A. Cattle grazing pasture incorporate up to ten times more beta carotene and up to five times more vitamin E into their muscle tissue than grain fed animals. Then there are the omega-3s that I mentioned earlier. The meat of grazing

cattle and sheep contains up to two-thirds more omega-3s than the meat of grain-fed animals. Last but not least there's the omega-6 fatty acid called conjugated linoleic acid, CLA. It's one of the most powerful cancer fighting substances in nature and it occurs in the meat and milk of grazing animals. When cattle are switched to grain diets it virtually disappears from these foods. For thousands of years human beings have been protected by the nutrients in foods from grazing animals. Now thanks to unthinking farm subsidies they've been removed from our diets.

SOLAR-POWERED GRASSLAND

I live on Exmoor in Somerset where for centuries some of the finest beef in the world has been produced. The traditional breed in that part of the world is the Devon or "Red Ruby". The traditional and rational way to produce beef was to turn these animals out on herb-rich hill pastures for three years or so. That is all there was to it really. It produced wonderful beef full of all the nutrients we've been talking about. It was also great for the environment. The farmers needed no chemical fertilizers – the solar-powered grassland provided fertility. It also protected the planet from climate change by taking carbon from the atmosphere and locking

it up safely as soil organic matter. Sadly in today's distorted farm economy that kind of beef isn't economic any more. Many of the fields around me are ploughed for cereals at enormous environmental cost. There are farmers close to me who house their beef cattle in sheds all year round, feeding them on industrial grains bought on global markets. The beef goes into supermarkets. The customers who eat that beef won't be protected by the nutrients that earlier generations got from beef. Instead they'll get a product whose fats will increase their risk of heart attacks and a host of other diseases. When we are all urged to buy British beef who's being cheated here?

HEALTHIEST CATTLE ARE PASTURE FED

Just as pasture-fed cattle produce more nutritious beef, dairy cows grazing fresh grass produce milk with higher levels of omega-3s. Research at Aberdeen University showed that the levels of omega-3s were – on average – 30 per cent higher in organic milk than in conventionally produced milk. The differences were far greater in the summer months when the organically farmed cows had greater access to fresh grass and clover-rich pastures. What seems to matter is how much fresh grass there is in the animal's diet, not whether the

diet is organic. Organic or not - farmers running their herds on pasture for much of the year are likely to produce the best milk. The same is true of CLA. This compound is present in large amounts in the meat and milk of animals grazing fresh pasture, but when even small amounts of grain are introduced into the diet the levels in food drop dramatically. Much of the milk you buy in supermarkets – or even from the milkman – is produced from cows fed as much as 3 tonnes each of grain. So while they may graze grass for a few months in the summer, most of their food energy comes from grain. This makes a huge difference to the health-giving qualities of the milk.

The more lush the pasture, the greater the amount of this health-promoting CLA that ends up in the meat or milk. On average the fat of Irish milk contains up to three times more CLA than the fat of American milk, which is mostly produced from housed cattle fed on grains. Even modest amounts of CLA can make a big impact on health. One researcher estimated that eating one serving of grass-fed meat a day – plus a portion of cheese and a glass of milk from a grass-fed cow could significantly reduce the risk of cancer. While all pastures put CLA into the

meat and milk of grazing animals, traditional, herb-rich pastures produce the largest amounts. This is because CLA is produced in the animal's rumen by the action of microbes on a simpler substance called alpha-linoleic acid, found in the leaves of plants. While grasses contain reasonable levels of the compound, it occurs in much larger amounts in the leaves of wild plants such as dandelion, knapweed, cat's-ear, ox-eye daisy, plantain, rough hawkbit, self-heal, bird's-foot trefoil, clover, sorrel and yarrow. A century ago almost all Britain's grasslands contained this rich diversity of wild species. It was these flower-filled pastures that inspired generations of poets and artists. We now know they contributed a great deal to people's health. Today most of them have gone, victims of the modern farming fashion for "clean" grassland and the chemical fertilizers and sprays that produce it.

DEGRADATION OF OUR FOOD

In these and other ways the health values of everyday foods have been secretly degraded mainly because politicians of all parties have responded to the lobbying of agribusiness companies rather than to the interests of consumers. Both Europe and America have been

subsidising industrial grain production for more than 30 years. The western countries have produced - from the early 80s - huge surpluses of subsidised, chemically grown grain. These have swirled around the world, sometimes helping in famine relief, but more often destabilising sound, sustainable farming systems. So we have farmers in developing countries being kept in poverty by the undermining of their markets. It is grain used as a kind of global weapon of instability, destroying balanced and healthy food systems which is what it has done on Exmoor, where I live, and everywhere else in the world. We have sacrificed the self-reliance and healthy foods produced by grassland for a global, grain-based system that makes farmers dependent on chemical manufacturers for every gram of food they produce. It makes the rest of us dependent on global chemical companies and energy corporations for our food supply. Grassland made our food local and healthy. The grain habit makes our food supply precarious and the quality second rate. With our magnificent farming history we have somehow managed to globalise our food supply and subject it to the same forces that wrecked our banking industry.

DECLINE IN MINERAL CONTENT OF FOOD

Grain is a crop that is designed to make profits for chemical companies rather than farmers and, as with the British diet, it marks the failure of science. Chemical farming has depleted our agricultural soils of organic matter, which means that carbon is liberated from the soil adding to the atmospheric load. Chemical farming runs at far lower levels of soil organic matter than systems with grassland in it. This is another reason for the degradation of food. The consequences of this neglect of our soils have been apparent for years to those who took the trouble to look. You will recall the McCance and Widdowson 'Composition of Foods' reports which revealed a steady decline of mineral levels in many everyday fresh food items during a period of intensive chemical farming; this finding was made by David Thomas, a geologist who later trained as a nutritionist. He discovered that between 1940 and 1991 vegetables had lost - on average - 24 per cent of their magnesium, 46 per cent of their calcium, 27 per cent of their iron and no less than 76 per cent of their copper.

I M P O R T A N C E O F M Y C O R R H I Z A

One of the most effective ways of getting trace elements into food crops is to make use of *mycorrhiza* in the soil. These are the thread-like fungi that form intimate links with plant roots, actually penetrating the cells of the root cortex. The plant supplies the fungus with carbohydrates and amino acids in its sap. In return the fungus supplies the plant with minerals, helps it to resist drought and protects it against soil-borne diseases and harmful nematodes. In effect *mycorrhiza* form an extension of the plant's root system. They increase the surface area across which the plant can trade nutrients for minerals. Sir Albert Howard was writing about them 80 years ago. Finding ways to exploit *mycorrhiza* in crop growth is surely a task for the agricultural scientist. In reality the scientists have totally ignored this natural route to healthy crops. This is principally because it is not in the interests of fertilizer companies whose products destroy *mycorrhiza*.

CHEMICALS DEPRIVE SOIL OF MINERALS

Former farmer John Reeves has spent more than twenty years carrying out his own research on

soil minerals, and the way they're taken up by crops. He teamed up with a university chemist to get the necessary analysis done. Reeves devised his own "mineral score" to represent the overall content of fourteen essential trace elements including boron, cobalt, copper, iron, magnesium, zinc and selenium. He included in his trials a range of everyday vegetables – carrots, peas, onions, parsnips, potatoes and broad beans. When the vegetables were grown on cultivated soils without chemical fertilizers their mineral scores were satisfactory, though not high, but when they were grown on soils that had been treated with chemical fertilizer – particularly phosphate – they contained up to 25 per cent fewer minerals. Inoculating soils with *mycorrhiza* had the opposite effect – the mineral scores soared. Comparing the two treatments, vegetables grown on soils with healthy populations of *mycorrhiza* contained up to 65 per cent more minerals than those from soils fertilized by chemicals. Reeves believes his results show why there is so much ill health in western societies. They have relied on chemical fertilizers to grow most of their food. Yet those same chemicals – particularly phosphates – destroy the natural

system for growing healthy, nutrient-filled crops. As if that wasn't enough, most farmers rely on fungicide sprays to deal with diseases on their crops. The irony is that these chemicals are also likely to be killing the very soil fungi that could prevent their crops becoming diseased in the first place.

This is all very gloomy so where do we go from here? Science has let us down. It has failed to show clearly and unequivocally what constitutes a healthy diet. In the same way it has failed to develop a sustainable system for producing healthy foods. It is assumed that high-input, chemical agriculture is the best way to supply a growing world population with healthy food. Scientifically the case has not been proven, yet to suggest any alternative is to risk being branded a heretic and excommunicated from mainstream agriculture.

NEED FOR NUTRIENT RICH FOOD

So how do we go forward? We need to radically change the culture in agriculture. We have a farming system dedicated to producing large quantities of vegetable energy and trading it globally. Instead we need an agriculture dedicated, not to producing global commodities,

but nutrient rich foods, the kinds of foods that make people healthy. Since science has so far failed to show the way, we'll need to look back to an earlier form of knowledge, the knowledge that informed rural communities, from generation to generation, of the foods that would safeguard their health and the farming methods that would produce them unflinchingly, in good years and bad. On these islands the model is likely to be the mixed farming culture that right up until the mid 20th century succeeded in producing healthy food sustainably. That's the political task that faces all of us.

RETURN TO PROTECTIVE FOODS

However, what decisions do we make as individual consumers? It will certainly be to maintain our interest in fresh fruit and vegetables, though we might try to ensure they're produced on fertile soils, high in organic matter and biological activity. We should reduce our consumption of carbohydrates, particularly the most dangerous ones – sugar, white flour and all its products, and the ubiquitous high-fructose corn syrup that finds its way into so many processed foods. Perhaps most important of all we should embrace the old concept of protective foods, foods containing

the full range of proteins, vitamins and minerals we need for health. These will include meat, fresh whole milk and eggs. But for health it is vital that they're from animals grazing fresh, clover-rich pasture, or in the case of poultry, having daily access to fresh pasture. These foods are our national heritage and we need to claim them back. In doing so we won't merely be doing the best we can for our own and our family's health, we'll be helping to improve our environment and give our planet a healthier future too.

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WHITE BREAD... IS IT FIT TO EAT?

Elizabeth Gay reveals some alarming facts

The millers sow the seeds and the surgeons reap the crop."
Dr. John Maberly.

There is no doubt that until nutrition is improved in our country there will continue to be ill health on a wide scale and our hospitals will be full, at enormous cost to the nation.

Dr. John Maberly, MRCS, LRCP, author of "Health of the Nation and Deficiency Diseases", published in 1938, laid responsibility for so much ill health even in those days, largely at the door of the millers, as they were the ones who first began the process that destroyed the wheat used for making bread. He wrote, *"...millers have discovered a method of mutilating wheat by which they can sell one portion containing essential vitamins and some of the important minerals and proteins as patent poultry foods, and supply the residue to human beings for the purpose of making bread....Powerful financial groups have now obtained an almost complete stranglehold on the processes of milling or more*

correctly speaking, the mutilation of wheat." He refers to the "deadly white bread" of today.

A contributory factor to the degradation of flour began when flour ceased to be stone ground and the roller mills came into common use.

WARTIME GOOD HEALTH

During World War 2, it is well known that the health of the nation improved, mainly as a result of a Government decree that forced millers to make bread with 85% extraction flour, thereby ensuring that more of the valuable wheat grain was included in the flour.

Maurice Frohn, Consultant Surgeon Retd., who is a great admirer of Surgeon Captain T.L.Cleave, referred to 30th September, 1956 when Parliament approved the Flour Order from 85% National Flour to 70% extraction rate white flour, as a date of National Disaster. In a letter written to me more than 25 years ago, Maurice Frohn explained what happens to the body when white bread is eaten instead of wholemeal:

In this extract from the letter he said that eating white bread has the following effect -

- First, it slows the bowel contents to cause constipation which can lead to varicosities, haemorrhoids and diverticular disease. This is the mechanical effect of white flour, not because of what is in it, but because of what is NOT in it, or has been extracted by the flour millers, namely, the roughage in the form of bran.
- Secondly, white bread alters the type of bacteria in the bowel from aerobic to anaerobic, which act on the bile salts to form deoxycho1ic acid and methyl cholanthrene, which are potent cancer producing chemicals. This is the chemical effect of white flour and sugar.

These chemicals associated with constipation lie in contact with the lining of the bowel for longer than is natural and this is why cancer is most common in the sigmoid colon where there is maximum stasis and maximum concentration.

- Thirdly, white bread or sugar can be considered as a packet of energy or calories in undiluted form. It is absorbed into the blood

rapidly as a peak causing over-stimulation of the insulin islets of the pancreas and which after twenty years or so of such treatment atrophy and diabetes results. Also, as this refined food is rapidly absorbed hunger is not satisfied or recurs early and more food is eaten resulting in obesity and all its complications.

- Finally, white bread is deficient in essential fatty acids, minerals and vitamins, particularly the B group.

The millers advertise that their flour is "enriched" (an example of perversion of the English language) with thiamine (B₁), riboflavin (B₂) and Niacin. But these are synthetically made and synthetic thiamine is largely destroyed in baking, being thermo labile. Natural thiamine is conjugated and more thermo-stable as a result. Riboflavin is made in the colon anyway and synthetic niacin is totally absorbed by the bowel while natural niacin, being conjugated, is only partly absorbed. The body gets what it does **not** demand, and does not get what it **does** demand! Meanwhile, pyridoxine (B₆) and pantothenic acid are seriously deficient. Furthermore, iron in the ferric ion form is added and is only absorbed in the ferrous ion form.

The necessity for adding calcium to counterbalance phytic acid is due to misinterpretation of animal experiments in 1946. The experiments were done on rats that have no Vitamin D and are dependent on calcium, but rickets in children, chickens and puppies is due to Vitamin D deficiency, not calcium deficiency. There is no recorded human case of decalcification due to eating wholemeal in Western Society.

In nature chemicals are balanced one with another and a fine example of this is the essential fatty acids (EFA) and Vitamin E in the embryo or germ. EFA are needed for cell wall structure and the Vitamin E (Tocopherols) are present to prevent their oxidation to epoxides, which are cancer-producing chemicals. The bleaching agent or "improver" (another perversion) is chlorine dioxide which destroys the Vitamin E, so that the antioxidant is destroyed allowing EFA. to be converted to epoxides etc. Most of the EFA is removed in refining the wheat, but unfortunately we add it to our food as polyunsaturated fatty acids in soft margarine.

IMPORTANCE OF BRAN

The properties of bran are both physical and chemical and it is a most complex substance.

- First, bran, being insoluble acts as a dilutant of high-energy foods, so that they are absorbed as a plateau and not as a peak, thereby satisfying hunger for longer and not over stimulating the pancreas.
- Secondly, bran is a hemi cellulose, its free hydroxyl groups combining with water to form gums, which act as a laxative preventing constipation.
- Thirdly, bran is porous like blotting paper and draws up water acting as a laxative again, but also taking up dietary toxins and it may absorb on to its surface dietary cholesterol thus preventing the diseases of raised cholesterol and other fats.
- Fourthly, bran appears to alter the bacteriology of the bowel to aerobic type of bacteria, which does not degrade the bile salts.
- Fifthly, the bran layers contain at least 70-30% of the B group Vitamins, essential minerals and rare elements.
- Sixthly, bran, in including the aleurone layer, contains the high quality protein so desperately needed in poor diets.

- Finally, ischaemic heart disease has been partly related to magnesium deficiency. Yet 90% of the magnesium lies in the bran, which is milled out. Since sugar and fat contain no magnesium and overcooked vegetables are made deficient, then people are dependent upon their water supply for magnesium, but if they live in a soft water area, then their magnesium balance is tipped into a deficiency. Epidemiological studies have confirmed the relationship between heart disease and soft water areas.

White flour is made because of its commercial advantages. As it contains no fatty acids or other nutrients it is not affected by bacteria or moulds. As a result it has a long shelf life and the white bread does not go mouldy. Also white flour has easier machine handling properties, so that now bread is made for machines, not for man. Finally, white bread can be considered as the most expensive way of buying water, thereby giving good profits.

White flour from which bread, cakes, pastry, biscuits are made is largely starch (polymer of glucose) and water.

THE MODERN PATTERN OF DISEASE

Western Society has been on a refined diet since about 1880 and the full effects are now manifest in the present pattern and succession of disease. The fat child with frequently carious teeth may develop appendicitis in adolescence. He may later develop a peptic ulcer or gall stones according to his disposition, also haemorrhoids and varicose veins. From middle age he will certainly have developed the mechanical effect of constipation, diverticular disease, and later with the added chemical effect, the risk of cancer of the large bowel. Later, due to hardening of the arteries, a stroke or heart attack may occur. All these diseases are one; they are only different manifestations of the same disorder - refined diet. Disease is not inevitable; it is produced as a result of disorder and an unbalanced life style and diet. Man should not die of disease but of senescence at a great age."

WHAT WE ARE BEING DEPRIVED OF

The implications of the milling process to those who eat white bread, as pointed out by Dr. Maynard Murray, are as follows:

- Eighty-six percent of the manganese content is removed by the milling process. Chickens and animals experimentally deprived of manganese grow improperly and often become sterile.
- A large proportion of selenium is removed in the process. Rats and chickens deprived of selenium show signs of liver deterioration.
- Approximately 78 percent of the zinc is removed; zinc is known to speed the healing of wounds and human dwarfs are a recognized result of severe deficiency of zinc.
- Eighty-nine percent of the cobalt is removed; cobalt is known to be a key element in Vitamin B-12, is important to the maturing of red blood cells which carry iron and oxygen in all warm-blooded mammals.
- Nearly half of the chromium is removed. Lack of chromium has been shown to contribute to the incidence of diabetes.
- Seventy-seven percent of the Vitamin B-1 and 67 percent of the folic acid are lost; both, along with other trace elements are key in the manufacture of RNA and DNA, the chemicals which pass along the genetic code concerned with the building of cells and procreation.
- Eighty percent of the B-2 and 81 percent of Vitamin B-3 are lost; both are important in mucous membrane health and resistance to Pellagra.
- Seventy-two percent of B-6 is lost; Vitamin B-6 has to do with the metabolism of amino acids which are the building blocks of proteins making up most of the body.
- Most of the Vitamin A is lost in the process; Vitamin A is essential in the maintenance of good vision and healthy skin.
- Eighty-six percent of the Vitamin E and most of the Vitamin D content are lost; Vitamin E is necessary in the proper development and maintenance of cell membranes and Vitamin D is important in utilization of calcium and Vitamin A.

Magnus Hippocrates (born 460 BC) said, "*And this I know, moreover, that to the human body it makes a great difference whether the bread be fine or*

coarse, of wheat with or without the hull (bran)... Whoever pays no attention to these things, or paying no attention does not comprehend them, how can he understand the diseases which befall a man? For by every one of these things, a man is affected and changed this way or that and the whole of his life is subjected to them whether in health, convalescence or disease. Nothing else then can be more important or more necessary to know than these things."

These wise words of Hippocrates, written many hundreds of years ago have largely fallen on deaf ears. We need to listen urgently before it is too late.

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Sea Energy Agriculture.
Maynard Murray M.D.
Published by Acres. USA

Maurice J.N.Frohn F.R.C.S.
Letter dated 8th February 1982.

Health of the Nation & Deficiency Diseases. John Maberly, MRCS. LRCP.

TRELLIS,

SCOTLAND'S THERAPEUTIC GARDENING NETWORK

Report by Fiona Thackeray

Trellis is the biggest gardening network in Scotland. Constituted in January 2005 as The Scottish Therapeutic Gardening Network (STGN), the name, 'Trellis' was chosen later to convey the idea of support, our main function. Trellis exists to support, promote and develop the use of horticulture for health, well-being and life opportunities for all. In less 'mission-speak' language, Trellis helps people grow things, supporting projects where gardening breathes new life into those faced with social and economic disadvantage, disability, illness and other difficult circumstances. Our work stems from the idea of '*Biophilia*', or love of life, which refers to the innate human affiliation with other species, borne of our shared evolutionary heritage. Developed by Harvard biologist E.O. Wilson, the theory recognizes the human need for contact with nature and the importance of this contact for our well-being.

We work with 150 projects from Shetland to the Borders, in

community settings, farms, hospitals, prisons, allotments, housing associations, schools, colleges, social firms, community gardens, nursing homes and day-care centres. At these projects, the power of gardening is harnessed to help improve literacy, promote mental health, and as a component in stroke-rehabilitation programmes and dementia treatment. But gardening is also used to help offenders prepare for work and life after custody, to help war veterans work through the symptoms of combat stress and to enable deprived communities improve their access to fresh, affordable produce. Some studies show that people are more likely to include fresh vegetables and fruit in their diet if they have had a hand in growing them.

Despite their skilled staff and transformational results, gardening projects struggle against isolation, lack of resources and poor recognition. Trellis addresses these problems by providing support services and advocacy, acting as the

representative voice and umbrella body for Scottish projects. Our support services include networking events, a query service and newsletter, an annual conference, profile-raising activities and on-site advice. New services planned for 2009 include training events for practitioners and an innovative Research and Evidence Working Group. Several Scottish academics are involved in this work, which will both initiate new research studying the mechanisms and impact of therapeutic horticulture and collate existing evidence to make it accessible to a wider audience.

While people benefit in many ways from working in gardens, just being in or passively viewing a natural environment can also have profoundly positive effects on human health, as documented by Dr Roger Ulrich who found post surgical cardiac patients with a view of a 'green scene' recovered more quickly than those with a window overlooking

a built-up environment. O.Morris likewise found reduced illness rates in prisoners with a cell window overlooking surrounding countryside, as compared with those whose window looked onto the concrete courtyard. (cf *Trellis Research Briefing*, www.trellisscotland.org.uk/research).

Trellis secured financial support this year to work in partnership with the Federation of City Farms and Community Gardens (FCFCG) and the Allotments Regeneration Initiative (ARI). This exciting new project will involve using a team of fieldworkers to provide increased support to therapeutic, community and allotment garden projects across Scotland including study tours and profile-raising activities. Over the next four years we hope this work will see more and more people benefit from gardening projects that bring them closer to the soil and the produce we eat, and in turn closer to good health and well-being.

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HOW FOOD GROWN IN DENATURED SOIL IS MAKING US ILL

AND WHAT WE CAN DO ABOUT IT.

Elizabeth Gay looks back on the wisdom of the past in
C.Alma Baker's book "*The Labouring Earth*"

“**F**ood does more to decide our state of health than any other factor in life”. So said C.Alma Baker writing in his book *The Labouring Earth*. Although his book was written some 60 years ago, as a farmer himself, he was very concerned about what he called “deficiency diseases” which are primarily caused by poor quality food grown in soil deprived of its essential ingredients that affected not only man but animals and plants as well. He named both tuberculosis and cancer as deficiency diseases.

RESPONSIBILITY OF THE FARMER

Farmers are the salt of the earth and without them we perish but they have sometimes been unfairly vilified and put under great pressure, often against their will, to produce more and more to satisfy commercial demands. Alma Baker wrote,

“Their responsibilities are of prime importance, more important to the world than the statesman or the politician, for it is up to farmers...so to cultivate the thin layers of the earth's surface that mankind may live and thrive in the good health that is the rightful heritage of all”.

However, forced production and the spread of disease move along parallel lines. *“People are working as though the only purpose of life were the making of money and this end justified all and every means. In his pursuit man has not only exploited his fellows, but greatly daring, has exploited the earth by whose gifts we live”.* He was convinced that the vexed problem of T.B in cattle, mastitis and even foot and mouth disease were caused by highly mineralised (chemically fertilized) pastures. Cattle were never designed to eat solely grass in the first place. They are essentially browsers and, as

cattle raised on organic farms have shown, when they are free to eat what they choose they browse on different varieties of grasses, herbs and wild flowers as well as on hedges and leaves of some trees.

WORKING IN TUNE WITH NATURE

Farming methods have greatly changed since Alma Baker wrote his book but he could see even then what the future might bring. *" If the husbandman of old time knew nothing of our problems it is because he lived in touch with Nature, had inherited traditional knowledge and worked intuitively in response to the call of the land of which he knew himself a part. A like inner or traditional knowledge is found among primitive peoples. If the cultivator will prepare his soil as Nature demands rather than as his fancy directs, then Nature will come in and play her part, and he will win the results he expects from his labours. If on the other hand he expects to impose an entirely artificial system upon the earth he is privileged to cultivate, he must wake sooner or later to the understanding that he has not been working with Nature, but against her, with results that can only be disastrous. The fatal error of latter-day cultivation is the belief that man can handle the field as though it were a*

factory, and the soil as though it were a chemical equation that would react in a set way to addition of his own devising."

The chemical industry and the politicians who promoted chemical farming have a great deal to answer for. Between them they have robbed us of our birthright; wholesome, natural food.

PROBLEM OF MALNUTRITION

Despite all the advances in medical treatment the spread of disease continues, with malnutrition at its fore. As we have seen, in many developed countries we now have widespread obesity, which is another form of malnutrition, and unfortunately malnutrition cannot be cured with denatured food. Even the present government's attempts to encourage people to eat five pieces of fruit a day cannot make up for the denatured flour in white bread which contains only a small proportion of the vitamin elements of 150 years ago. The problem of malnutrition is urgent since each generation begets its successors and passes on its heritage of disease and structural malformation. No scientific institutions have been able to control the endless outbreaks of disease. *"Sow seed in denatured soil, feed it with poison to make it expand, and after a few years*

you and those you love most will reap disease and premature death. There can be no other harvest."

RULES OF HUSBANDRY ABANDONED

Alma Baker saw clearly what was happening. The old temperate pace of agriculture production had been violently speeded up and the rules of husbandry, learned through years of experience, had been abandoned. Rules such as the rotation of crops and allowing exhausted land a period in which to rest and restore lost nitrogen.

IMPORTANCE OF HUMUS

As a great admirer of both Sir Robert McCarrison and Sir Albert Howard, he recognized the value of humus, the storehouse of fertility, which was once routinely spread over fields and the essential earthworms and micro organisms were left to do their valuable work in releasing their latent store of natural fertilisers to nourish crops. The vitamin content of crops is compromised if the soil is deprived of the requisite number of living organisms. In years gone by a multitude of birds would follow the plough, but now where the soil is exhausted there are no earthworms or insects for them to eat and the birds have gone. Alma Baker observed, "*men have*

taken to intoxicating the earth, to stimulating it with mineral fertilizers quite foreign to its nature, which are capable of producing crops of unfamiliar magnitude. When I examined these crops carefully I could not help being impressed but after a time my first suspicions that they could not be good for the land were confirmed. The minerals and sprays killed the earthworm, one of Nature's greatest servants; they destroyed the micro organisms and gradually affected the humus that is the very parent of growth.

DEFICIENCY DISEASES

I noted that while these things were taking place deficiency diseases were spreading everywhere and that resistance to disease was diminishing in humans, animals, and green growing things. Science, battling untiringly and resourcefully with the effects, was ignoring the causes; mankind was going in danger first of its health and then perhaps of its life. I recalled a pregnant statement by that great thinker, Dr. Rudolph Steiner, who had looked upon the sorry scene with his extraordinary powers of intuition and his deep knowledge: "The time will come," he said, "when the people of the earth will starve in the midst of plenty."

Dr. Alexis Carrel wrote that

chemical fertilisers, by increasing the abundance of crops without replacing all the exhausted elements in the soil, have contributed indirectly to change the nutritive value of cereal grain and vegetables. In this way man's greed has sacrificed quality for quantity.

FOOD GROWN ON SICK SOIL

We all know the saying "we are what we eat." Alma Baker pointed out that the relation of soil to nutrition was not yet fully understood and people had been beguiled into eating food grown on sick soil and all manner of preparations made not to nourish but to sell. The tragedy as he saw it some 60 years ago was that *"all leaders of public opinion, all the dietetic and general health practitioners are dissatisfied, profoundly dissatisfied, with the general health of the population; they have considered and exhausted every superficial aspect of the crisis in turn, but unhappily, have ignored the fundamental one altogether. Now they confess to failure and prepare to give more time, labour and money to developing all the curative factors, while if they would take courage in both hands and grasp the problem by its roots they might solve it."* It seems nothing has changed.

Alma Baker drew attention to cosmic rays which in his day few

people considered were of importance. He believed that as well as the effect of the moon and sun, cosmic dust also contributed to the health of plants by supplying them with mineral salts even though they could not be detected in the earth in which the plants were growing. If this is true, one wonders if the present popular method of growing fruit and vegetables in polytunnels is depriving the produce not only of direct sun, moon and rain but of this other vital life force as well.

Food is being produced for supermarkets now, not people. The farmer is at the mercy of the supermarkets and if he cannot produce the unblemished fruit and the perfectly shaped vegetables that they demand he runs the risk of not being able to sell his produce. Unfortunately, the housewife is not given the choice. If she were, I am sure she would prefer to buy, for example, a cheaper unsprayed, mis-shapen apple to a chemically produced bloated, perfectly round and tasteless version. Many people cannot remember or have never experienced what a naturally grown apple tastes like, so they are unable to discern the difference.

FOLLY OF FACTORY FARMING

Alma Baker observed, *"one of the main problems was that men had*

been led to believe that if a farm can be run on factory lines it will give greatly increased returns. Profit, where it becomes the be-all and end-all, rules and wrecks a startled world. Mechanization, by destroying the earthworm, and mineralization, by destroying the humus, have changed the character of the farm. We increase the fertilizers in order to **maintain** production, while plant disease spreads and insect pests increase. What do sprays and minerals cost agriculture? What do they cost the soil? Did the land suffer from the evils it knows today before this stimulation of the soil was practised?" Have diseases of humans, animals and plants increased since artificial manures replaced organic?

THE ON-GOING PROBLEM OF T.B. IN CATTLE

Weston Price noted in his studies of primitive peoples around the world, that when their health broke down due to the change from their traditional unrefined foods to Western style refined foods, they developed tuberculosis. André Voisin, the celebrated French veterinarian, also observed that T.B. in cattle was due to either poor housing or inappropriate food. He advised "Systematic eradication of cows reacting to tuberculin must therefore be accompanied by

amelioration of living conditions, but above all by **improvement of the diet and of the soil.**" He highlighted deficiencies in the soil, especially of trace elements. Alma Baker believed that T.B. was caused by unnatural, highly mineralised pastures on which the cattle fed. If he was right could this not be the cause of T.B. in badgers as well? If the natural resistance in their immune systems has been compromised could this not be the link? Where there have been outbreaks of T.B. should there not first be an analysis of the soil to establish if there are deficiencies that could be rectified before embarking on the eradication of badgers in affected areas? In this way both cattle and badgers would stand to benefit enabling them to live together in harmony as they always used to before cattle began to be enclosed.

"We must prepare to resist the rifling of Nature's reserves which future generations must be allowed to share. We owe a debt to those who are to come after us if we do not wish to be regarded as fraudulent trustees. I insist that every generation is trustee for the one that will follow it. The treasures of Mother Earth are not unlimited; they cannot survive a succession, however brief, of spendthrift generations."

EXPLOITATION OF THE SOIL

"Never in recorded history has there been such a merciless exploitation of irreplaceable treasures as the last hundred years have seen. No one among our leaders has paused to think that the world can become bankrupt, unable to pay its way because its assets are exhausted, but this is the condition to which we have come dangerously near."

GIVING BACK FERTILITY TO THE SOIL

"Humus,though it can be exhausted to the point at which cultivation fails, can be renewed by a return to sane methods of agriculture, and when we can give back to the soil what has been stolen from it, the people throughout the world can live a healthy life.....no man can do more for the physical regeneration of the world than the farmers who give back fertility to the fields that have been ravaged, yes, ravaged and rendered worthless for the production of food that can nourish the people and redeem them from the burden of deficiency diseases.....for the sake of the world we live in and prepare for those who come after us we must return to natural cultivation, and we have no time to spare in returning to it."

Nutritionist Dr. David Thomas, in

describing the extensive erosion of trace elements in the last 50 years, stressed their importance to the human body. Deficiencies in the food we eat put our internal defence systems at risk and have been linked to obesity, insulin resistance, heart disease and mental illness. Plants can only obtain trace elements from the soil, so our food contains only what minerals the soil, through good husbandry provides.

The most likely explanation for this erosion of trace element status is the intensification of agriculture with its reliance on the use of nitrogen-phosphate-potash fertilizers. These force plants to grow but contain none of the vital trace elements.

HELD TO RANSOM BY CHEMICAL INDUSTRIES

Alma Baker would be distressed if he could see how all his warnings were ignored and everything that he forecast would happen has indeed come to pass. Not only is the financial system bankrupt but in many places the soil has lost much of its value too. We have lost respect for Nature, for animals and wildlife and worst of all for each other in the pursuit for short term gain. We have allowed the chemical companies to hold us to ransom without thought for the future and there is no doubt that if we let this

continue the consequences will be dire.

SOIL ANALYSIS PRIOR TO PLANTING

However, Alma Baker pointed out that all was not lost. *"Disease is merely discord, and this discord can be resolved. At present our trouble is that we are concerned with cure and not with prevention, and the road to prevention can be reached only by way of sound food produced from a living soil."* He urged that a strict scientific and bacterial analysis should be made of all areas prior to planting.

In his epilogue, he says, *"if my theories are correct, I believe that what I call denatured foods*

are the cause of the spread of such plagues as cancer, influenza, rickets, pneumonia, dental troubles and a host of others; they are the origin of the worst happenings to the intestinal region. On the other side of life they attack the nervous system and are responsible for the violence and hysteria that run riot through the world today, perpetuating hatreds, causing wars, and threatening the fabric of civilization".

These words written many years ago are even more true today than they were then. Only far-sighted men with enough wisdom to bring about change will be able to halt the steady decline in health due to the exhaustion of the soil.

- References: The Labouring Earth. C.Alma Baker, C.B.E. Pub. Heath Cranton Ltd, 1940
Soil, Grass and Cancer. André Voisin. Pub. Crosby Lockwood & Son. 1959
Nutrition and Physical Degeneration. Weston Price. Pub. The Price-Pottenger Nutrition Foundation. 1970
Journal of McCarrison Society, Nutrition and Health. Vol. 17 No 2 (2003).

".....the decay of past civilisations was due to the wholesale ploughing up of grass necessitated by the increasing demands of civilisation."

Farming and Gardening for Health or Disease - Sir Albert Howard.

INDIGESTION

Tom Stockdale gives his reasons for this complaint.

The possession of a good digestive system is fundamental to the possession of good health. Despite this, indigestion is a common problem and its causes are often misunderstood. The reflux of acidic material from the duodenum into the stomach is not caused by producing too much gastric acid, but is caused by producing too little bicarbonate (alkali) in the pancreatic gland. More energy derived from carbohydrates and fats is required by the pancreas to produce bicarbonate than by the tissue of the stomach to produce gastric acid. Consequently, when there is a metabolic problem in producing energy from food it is the production of alkali rather than the production of acid which is adversely affected.

Failure to produce sufficient energy from food is usually a symptom of hypothyroidism which is caused by either an inadequate supply of iodine for thyroxine synthesis or of selenium for an enzyme which activates thyroxine. Because energy is constantly being used to prevent the loss of salt

(sodium chloride) in urine it follows that indigestion with acid reflux is always associated with the risk that salt deficiency will eventually restrict the synthesis of gastric acid (hydrogen chloride).

When insufficient gastric acid is released into the lumen of the stomach the protein contained in the diet cannot be completely broken down into amino acids and the production of hormones by the tissues of the stomach is restricted. This leads to indigestion without acid reflux and to food intolerances resulting from the incompletely digested proteins being passed into the small intestine. The best known food intolerance is associated with coeliac disease caused by the consumption of wheat gluten but there are many other causes of food intolerance.

Failure to consume or retain sufficient salt can also lead to sodium deficiency and to people feeling cold and unwell. Consideration needs to be given to whether salt deficiency in association with hypothyroidism is a factor in causing myalgic encephalomyelitis or anorexia or bulimia.

BOOK REVIEWS

By Cedric de Voil

Two of our senior members, both from Aberfeldy have published books within the past year.

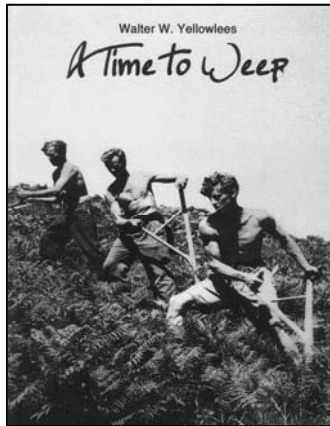
***"A Time To Weep"* by Walter W. Yellowlees**

Publisher - Austin & Macauley

ISBN 978 1 905609 66-6. 212 pages £7.99

Catriona and I had the great pleasure of being two of the many people who attended Walter Yellowlees' book launch at the Aberfeldy Watermill Bookshop in early June.

This is a philosophical work in which Walter discusses the decline in the standards of UK morality over the past 50 years. He argues that the basic cause of our national problems is simple – we have abandoned Christianity as the basis of our human behaviour.



Walter also takes quite a swipe at the negative effects of Humanism and of Richard Dawkins in particular. Walter's observations about the massive rural depopulation and the fact that we have to import 40% of our national diet, link

his ideas in this book with his previous book, *"A Doctor In The Wilderness"*.

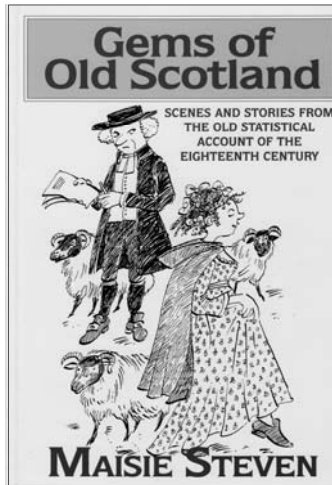
I thoroughly recommend this little book. It is thought provoking.

“Gems Of Old Scotland” by Maisie Steven

Publisher – Argyll Publishing

ISBN 978 1 906134129. 192 pages £7.99

Maisie Steven has produced a gem of a book based on her observations from the Old Statistical Account. She made great use of this information in the preparation of her book *“The Good Scots Diet”*. Maisie was introduced to the Old Statistical Account by her late husband, Campbell Steven, a prolific writer on outdoor Scotland.



The responses of Church of Scotland ministers to Sir John Sinclair's enormous questionnaire about life in Scotland back in 1790 are really fascinating. The document is the envy of social historians elsewhere. These snippets paint an intriguing picture of the lives of our Scottish forebears. The book has amusing illustrations by Scoular Anderson. It is a most enjoyable read.