

*Small
farms*



Food & Health in the Scottish Highlands

Four Lectures from a Rural Practice

by

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Introduction

Often after attending meetings at which I have tried to stress the enormous importance of the part played by faulty food in causing disease, I have sensed, from questions and discussions, that the audience, sometimes including medical graduates and undergraduates, has not grasped the essence of a very simple message.

In presenting the following lectures, I therefore make no apology to those readers who may object to repetition of the same theme in each lecture. The theme bears repetition. The lesson cannot be repeated too often at a time when confusion reigns in the ranks of scientists, health educators and physicians, no less than among bewildered consumers all seeking the best nourishment for health. The confusion of conflicting theories on the dietary cause of disease is partly caused by the financial power and influence of commercial interests.

Scientists employed by food manufacturers inevitably become biased in support of their employers. Government departments are subjected to pressures by manufacturers who are more interested in selling industrial products than in promoting the health of the soil or the health of the people who live on it. The history of the mass production of bread (1) and of the government's role in promoting the sale of chemical fertilizers (2) are examples of this process.

Thus government dictate, by tax or by subsidy, now determines the priorities in land use and in the production of food. In the United Kingdom these priorities have not so far included the preservation of mixed farming or a halt to rural depopulation, or the availability of fresh, organically grown food. To blame the "greed" of farmers for this state of affairs is unjust. Farming policy is now determined by government ministers and their officials, sitting not in London or in Edinburgh, but in Brussels. From the experience of recent years it seems that the European Common Agricultural Policy is designed to supply the Soviet Union with cheap food at the expense of the E.E.C. Taxpayers!

The choice of priorities in preventing disease is not made easier by the attitude of the medical profession. The concept of unity in the health of the soil, plants, animals and man seems to be beyond the comprehension of professional leaders with their passion for specialization and their consequent limited vision.

The lingering hope of the Beveridge era dies hard -- the hope that free access to a highly sophisticated modern medical service would reduce the incidence of disease. The hope has

been expressed in recent publications on prevention. For instance, when the Black Report (3) emphasised the far better health in the U.K. of the higher social classes, many commentators attributed the relatively poor state of health of social class 5 to the fact that this class -- mostly unskilled workers and their families -- lacked access to all that the N.H.S. [Britain's National Health Service] had to offer. This may be true in some of the derelict areas of our large cities, but I am sure that in most general practices the most frequent users of the Health Service are the lower income groups and that their ill-health has nothing to do with a lack of skilled medical advice. Surveys of domestic food consumption have shown repeatedly that at the lower end of the social scale, the use of refined processed food is the order of the day. Salads, fresh fruit and vegetables, dairy produce, whole grain cereals including wholewheat bread, are consumed in greater quantities by the upper classes. A B.B.C. staff member recently told me that, according to research into public viewing habits, lower income groups almost invariably watched I.T.V. [I.T.V. carries commercial advertising, the B.B.C. has no advertising] . So those least able to withstand powerful advertising of foods are most exposed to it.

Techniques in medicine or in surgery, however advanced, do not create health. Health cannot be created without good food based on sound agriculture. That is the essence of my argument.

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1. Land Use and Nutrition in a Highland Valley

The Highland Landscape

Our Perthshire valley of good farming land runs east and west and is enclosed by steep-sided hills which rise to heather-covered moors and forest. The landscape is a superb harmony of fields, rivers, mountains and lochs.

Visitors, sometimes medically qualified visitors, are apt to exclaim as they gaze on this marvellous vista "But surely there is no need for a doctor in a place like this?" They echo the widely held belief that many diseases of our time are caused by the rush of urban living, by executive type stress. If urban stress was an important cause of diseases like duodenal ulcer, coronary thrombosis or high blood pressure then their occurrence would be rare in Aberfeldy and its strath.

Alas, this is not so. These diseases are common in the modern Highlander. Here is no haven of health. The people appear to be plagued by modern diseases no less than town dwellers. The 3,500 patients in our area require the services of three doctors. Dental decay, diabetes, obesity, varicose veins, disordered bowel function, peptic ulcer, coronary heart disease, high blood pressure and, above all, cancer are encountered daily in the surgery.

General practitioners have a unique opportunity of observing the daily lives of their patients and to a student of human nutrition this tale of woe comes as no surprise. When visiting patients at mealtimes I have been repeatedly appalled at what I saw on the family table: tinned meat, tinned vegetables, very seldom any salads; masses of white bread, scones, biscuits, cakes, sweet drinks, packeted milk puddings, margarine instead of butter, and, in place of porridge, the ubiquitous packeted, sweetened breakfast foods.

Almost 50 years ago Sir Robert McCarrison gave detailed evidence showing why food like this was bound to make people ill (1). His conclusions have been confirmed by the work of Cleave (2) and Burkitt (3).

But the General Practitioner who tries, as I have tried, to wage war on this dreadful dietary regime finds the fight a lonely business. My medical colleagues seem to have little interest in the subject. Consumers, mesmerised by T.V. advertisements, sit before the screen stuffing themselves with the junk food, the advertising of which costs so much and takes up so much of their viewing time. So our national disease service continues to be one of the few growth industries in the land. In 1961 the National Health Service in England employed 575,000 people. by 1978 the number of employees had risen to 1.75 million. The service was reorganised in 1974: between that year and 1978 the number employed in administration rose from 82,000 to 100,000.

Ruins and Depopulation

When I explored the practice hinterland as a newcomer shortly after the Second World War I was deeply impressed by the number of ruins. Ruined cottages, ruined small farms, in some places whole rows of ruined cottages and even an entire ruined village in one place, all standing as silent monuments to a past age.

In one village known to me, which now houses about 15 people, there lived some 90 inhabitants in 1841. There were cobblers, weavers, millers and crofters. Water powered wheels using the numerous burns [streams] which run down the steep hills were the centres of simple industries, particularly milling, timber work and carpet weaving (7).

Official records show that the population of the Highland District of the County of Perth in 1841 totalled 21,657; by 1971 it had fallen to 7,218 (5).

Changing Patterns of Disease

The people here a hundred years ago had a high infant mortality, and often in childhood they suffered from various infections. Infectious bowel diseases like typhoid were not uncommon because of defective sanitation and polluted water supplies. Tuberculosis, especially bovine tuberculosis, was a frequent cause of death and disability. Susceptibility to infection especially among the poorer countrymen may well have been due to lowered resistance resulting from real hunger. Poor transport and primitive communications meant that the population were very dependent on local resources. In the early part of the 19th Century poor harvests often meant hunger. Although romantic to us, for some of the inhabitants of these ruins, life was a hand to mouth existence.

But we know from medical records that in those days the people did not suffer, as we do, from appendicitis, duodenal ulcer, coronary thrombosis and several other now common crippling diseases (6). Our conquest of infections has been accompanied by a rising tide of degenerations. These changes cannot be explained by changing age structure, or by improved diagnosis.

So here is a picture of massive rural depopulation, the disappearance of small rural industries and a switch from home grown food to imported processed food. A similar movement of food and people is going on all over the world. In every Continent populations are trekking from the rural areas to swell the populations of the ever-expanding cities and invariably this is accompanied by a rising incidence of what are sometimes called diseases of civilisation.

Cash and Husbandry

The following incident is, I think, a good example of the forces which compel this migration of people and change in food patterns.

Some 25 years ago I was so impressed with the excellent result of organic methods in my back garden that I acquired, rent-free, a small piece of crofting land, engaged a 17-year-old school-leaver to help me work it and started growing vegetables and soft fruit for sale. The tax laws at that time in operation meant that financial loss in a venture of this kind could be offset against tax. The project seemed to be going well but after about a couple of years, by which time I had taught the young man to drive, he found he could get double what I was able to pay him by driving a lorry at a Hydro Electric Scheme, and so he was off.

The tax laws at the same time were altered so that in any case I couldn't afford to pay labour on that scale!

Two things worked here. Firstly, the lure of high cash wages and, secondly, the prospect of a job less exacting or seemingly exacting, than working on the land. Are these not the factors which have so devastated our countryside? The domination of cash as a measure of everything and the desire of men to avoid the hard discipline of husbandry.

This process has now gone so far in Aberfeldy that some 70% of the arable land in the valley is growing barley for brewing or distilling or for animal feed. The arable farmers are heavily dependent on soluble chemicals and on machines and in the last two summers a helicopter has been seen criss-crossing this strath, spraying heavily in order to prevent devastation of the crop by aphid attack. Hardly any of our food now comes from local farms. All our milk has to be brought from a central creamery 30 miles away at Perth. No milk at all is produced locally and there are no market gardens. Field cabbages are sometimes grown to feed prize bulls but not for humans.

But I suppose that even in spite of inflation, cash incomes and purchasing power are greater than ever before. Houses are better and more comfortable. Electric power is universal and life generally for the country dwellers is easier -- that is for those who are left.

All this was implied by Oliver Goldsmith in his poem *The Deserted Village*. He saw that the accumulation of wealth was being bought at the expense of rural depopulation and the decay of men. I often quote to myself his most telling lines:

"A bold peasantry, their country's pride,
When once destroyed, can never be supplied"

The small family farms which I visited so often in my early years here have all gone. Some of them are holiday houses. Small farms are combined in larger units. The invention of new machines and the high cost of labour seem to make this inevitable.

Town and Country in a New Age

The doleful results of these trends can be discussed under three headings.

1. Threat of Falling Yields per Acre

Small labour-intensive farms which are well worked get more food per acre than do the large.

From the two small plots which I now cultivate beside my house I grow over half a ton of fresh food every year. The yield is about 5 tons per acre and I do this without using any artificial fertilisers or poison sprays. In Soviet Russia private plots occupy about 3% of all cultivated land in that unhappy country, yet they produce almost half of all vegetables consumed, almost half of all milk and meat, three quarters of all eggs and two thirds of the potatoes

2. Countrybred human stock

The nation loses countrybred human stock which it can ill afford to lose. I may be prejudiced but I believe that although there are wide variations in human behaviour, in Scotland at any rate countrybred children have more stability, more integrity, and possibly more wisdom than their townbred counterparts, and goodness knows, we need wisdom.

3. Balance between town and country

There is a terrible and *growing imbalance between town and country*. What a dramatic view of this imbalance one gets as one drives down from the Highlands! South of Stirling, which with its castle guards the entrance to the Glens, one enters the concrete wasteland of Scotland's industrial belt.

Is there a more sinister reason, I wonder, for the withering away of small-holdings and small farmers? They are the "bold peasantry" of Oliver Goldsmith. A man with his own acres, more or less self-sufficient in food, can afford to be bold. He is not nearly so amenable as the city mob to the manipulations of Orwell's thought police and the worship of Big Brother. That was, I imagine, the reason why Stalin simply butchered the small farmers who would not be herded into collectives. He saw in them a very real obstacle to the power of the State. Do the same thoughts run through the minds of those who by financial means are destroying our own small farmers?

What of the Future?

In the field of health and disease I believe some things can be said with certainty. Unless there is a change in our national diet so that we replace refined, processed and chemically manipulated food by fresh whole food, our National sickness will not improve. There will be no substantial reduction in the modern killing diseases. The cost of the National Health Service will go on

escalating.

Land Use in the Future

These thoughts put land at the very centre of economic life. If land use is to be devoted to maintaining national life and health as I have described., then there will have to be a massive return of population to the land.

These thoughts seem to be in general agreement with your worthy president, James Robertson, who, in his book *The Sane Alternative*, looks forward to a sane, humane, ecological future (10).

Unfortunately I fear I do not share his optimism that such a future will come. Possibly because as a family doctor I have spent so much of my time wringing my hands over the lunacies and perplexities of the human lot. I like to think of myself as a realist rather than a pessimist. The obstacles to a sane, humane and ecological future are in man himself. His capacity for indulging in lunacy can hardly qualify him to preside over a sane future. As for *humane* -- throughout history his inhumanity seems far to outstrip his altruism and his awful greed has destroyed any hope of learning the lessons of ecology.

"But och mankind are unco weak and little to be trusted
When self the wavering balance shakes
Tis rarely right adjusted."
-- Robert Burns

The Lunacies of Man

Lunacy may be rather a strong word but I would like to mention two prevailing trends which are obstacles to a sane future. The first of these is in the attitude of the scientific world in furthering man's health and wellbeing. In medicine the hopes of official thinking seem to be in the discovery of some new pill, operation or procedure which will cure cancer or some of the other serious prevailing diseases.

A recent often quoted U.K. Government publication on prevention (11) gave very little space to nutrition and did not mention agriculture at all. So my emphasis on whole fresh food organically grown if possible remains in official circles the subject for laughter.

My second prevailing trend which goes against a sane future is the awful dangers and lunacies of State tyranny. A dreadful example of this is the condition of agriculture in Soviet Russia where they are now growing less food than in the days of the Czar. The lesson from this is clear. If our Nation is to give the utmost priority to wise land use, in my opinion it is far better to leave the land in individual ownership. Russian collectives have been an appalling disaster. Here in Britain a warning of what happens when Government departments take over the responsibility for growing food was given shortly after the war in the shape of the "Ground Nuts Scheme" which did nothing but waste millions of pounds of tax-payers' money.

Possible Solutions

How individual land ownership can, through wise legislation, be geared to a sane humane and

ecological future I am afraid I do not know.

In my own minute example I might have been able to continue my market garden if I had not been subjected through the years to penal taxation. Death duties and taxes which bring ruin to large estates may give satisfaction to certain politicians but the end result is more depopulation.

I wonder if there is a better system of land use in Scotland than in a well-run estate with reasonable security of tenure for tenant farmers?

One measure which might encourage a return of population to the land and give new impetus to the revival of home agriculture as the basis for our nourishment would be cash incentives to the organic farmer. If organic produce commanded a higher price that might pay for the increased labour costs. There is nothing new in such cash incentives. They would merely be a reversal of a previous policy of incentives which gave huge sums of taxpayers' money in subsidies for the application of chemical fertilisers.

The State should not dictate to its citizens what they should eat or drink but surely it is time for legislation to protect the citizen from unscrupulous advertising? In advertising foods any reference to human health should be disallowed. All artificial additives to packaged or canned foods should be listed in letters large enough to be easily read. Food which requires artificial dye to make it attractive must have something wrong with it so all artificial food colouring should be prohibited.

The term "National Health Service" should be scrapped and the "Health" part of the "Department of Health and Social Security" would be named the "Department of *Medical Services*", getting rid of the Orwellian use of "Health". A Ministry of Land Use, Food and Health might take on the monumental task of restoring a sane balance between town and country and of making home grown food the basis of our health.

I realise these are wild dreams. Once there was a sane, humane, ecological place: that was the Garden of Eden. It ended in disaster because of the refusal of the man and the woman there to obey the laws of nature. (In my philosophy I cannot separate God and nature.) In the Garden of Eden man was given the immense privilege of dominating nature. I end with a quotation from "The Rape of the Earth" by Jacks and Whyte (12) which tells of the only way he can dominate and avoid disaster.

"Men are permitted to dominate nature on precisely the same conditions as trees and plants, namely that they improve the soil and leave it a little better for posterity than they found it. "

This paper was given at the "Turning Point" meeting on 28th November, 1981 in the Conway Hall, London, and later published in "Nutrition and Health" Vol. 1. pp 118-123, 1982.

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2. Why "Wholefood"?

Twenty-seven years ago when I sat in a university lecture room, the Professor of Therapeutics would begin his course of lectures by saying that the active agents, that is those medicines which did any good at all in altering the course of the disease, could almost be counted on the fingers of one hand. Quinine did help malaria, soluble arsenical compounds could bring to a halt the advance of syphilis, liver extract could cure pernicious anaemia - and a few others. But apart from these, he would say "If all the medicines being prescribed in Britain today were thrown into the sea, only the fish would suffer".

Yet even at that time this emphasis on the lack of effective drugs was getting out of date. For in the adjoining wards of Edinburgh Royal Infirmary we were shown patients, admitted to the hospital suffering from pneumonia, who, instead of getting worse and undergoing the harrowing course of this disease, were free from fever in 48 hours, sitting up and asking for nourishment.

This was thanks to May and Baker's new sulphonamides -- the "M and Bs" -- the magic tablets which were proving to be effective in a number of hitherto untreatable conditions.

And so the new age of medicine was born, the renaissance in doctoring which began in the mid-1930s. A few years later, during the war, penicillin came on the scene and astonished the world with its efficacy. After the war the biochemical revolution quickened its pace.

New broad spectrum antibiotics came fast and in profusion. Streptomycin was found to deter the tubercule bacillus, and at last the conquest of tuberculosis seemed in sight. Cortisone, hypotensives, the tranquillisers, the anticoagulants, poured from the busy laboratories like water from a fountain.

Into the hands of the medical profession had been put sharp, gleaming swords.

The impotence, in the face of disease, of the doctors of the pre-sulphamide era, so eloquently expressed by my professor, was a thing of the past and it seems that both doctors and patients have become so dazzled by these outstanding successes in the field of disease treatment that they have been blinded to the simple truth that many of the diseases need never have occurred.

The validity of this simple truth, as I have called it, had been given to the world in 1936 when the late Sir Robert McCarrison (17) delivered his Cantor Lectures before the Society of Arts. He gave the results of his researches into the relationship between food and health, and made a plea for creating a healthy nation on the basis of food which was fresh and whole.

Maybe it was an ironic twist of fate that the new understanding of the *cause* of disease came about at the same time as the renaissance in disease *treatment*.

Prevention and Treatment

So the medical profession of all advanced countries seem bent on devoting most of their energies to dealing with results, rather than causes.

I think this attitude is well summed up in an opinion expressed in the *B.M.J.* leading article last year. (1)

Professor A. B. MacGregor in an epidemiological survey of dental caries in Ghana had reported a generally lower incidence of tooth decay in that country except in the case of the more wealthy Ghanaians who could afford to buy imported refined flour and sugar. In this group the rate of decay approached that of Britain. As the standard of living in Ghana rises, it was predicted, soon the whole population would be eating, not their own indigenous cereals, but the imported refined carbohydrates. So dental caries in Ghana would become the scourge which it is in Britain. To meet this situation the article suggested the urgent necessity of a crash programme (how planners love crash programmes) for the training of African dentists. Or, in other words, arrange for a disease to happen and then call for urgent, expensive measures to treat it!

Sombre Statistics

As a nation, although our mortality statistics have shown steady improvement, we do not appear to get any healthier.

In 1956 the report from the Department of Health for Scotland (2) included this statement, "The hospitals are busier than ever, more outpatients and more patients treated in the wards ... Morbidity statistics from the Ministry of Pensions and National Insurance show no decline in the incidence of certifiable sickness".

In 1964 the same report (3) stated "In terms of hospital attendances and demands for hospital treatment it might seem that ill health was increasing ... There is no simple satisfactory explanation of the fact that better disease control, the saving of lives and improved environment are still accompanied by heavy sickness incidence".

The average number of weeks of sickness benefit for employed men in Great Britain (excluding civil servants) increased from 2.04 weeks in 1959/60 to 2.20 in 1962/63. The increases occurred in all age groups. (4)

In England and Wales the annual rate of discharge from hospital beds for acute illness has been rising from 61 per 1000 population in 1953 to 70 per 1000 in 1963. (5)

Some 90,000 school children in Britain are now leaving school with a full set of dentures. (6)

These are sombre statistics. Seventeen years experience as a G.P. in a Highland community has not shaken my conviction that improvement will never come about while our people continue their present disastrous dietary habits. Year by year incidents hammer home this truth.

A few years ago I attended a young mother in her first confinement. She was just five feet tall and her father was a farm worker. She had a long, difficult labour ending in operative delivery and a stillborn baby.

Studies in Aberdeen by Professor Sir Dugald Baird (7) have shown that in Social Class 1, that is the professional classes, only six per cent of mothers are under 5 ft. 1 in. in height whereas in Social Class V the percentage rate of small women is 30.

The stillbirth rates in Class V are 50 per cent more than in the professional classes, and the neonatal death rate, that is the death rate of babies in the first month of life, is no less than 100 per cent more.

Here is a classical example of the supreme importance of dietary factors in disease prevention. The small stature of the poorer mothers is due to their inferior diet, their pelvic bones tend to be too small to permit the safe passage of the baby. They are more prone to anaemia, toxæmia and abnormality of all kinds.

I was discussing these things recently in a large hospital with an obstetrician and suggesting that the whole aspect of maternity hospital work would change if only we could upgrade the diet of normal women from Social Class V to that of Social Class 1. "Yes," he replied, and we would be out of a job.

Evidence that Wholefood Improves Health

The steepest fall in stillbirth and neonatal death rates occurred during the war. A dramatic improvement which is generally attributed to the war time food policy -- a time when sugar was rationed, the extraction rate of flour was raised and the consumption of fresh milk was greatly increased. It cannot have been due to improved maternity services for there was a war time shortage of doctors and nurses.

But the experience in Holland (7) is even more relevant for those interested in whole food, because there, although during the German occupation food became scarce, the stillbirth rate fell from 25 per 1000 births before the war to 19 in 1944. Most of this improvement was due to decrease in toxæmia of pregnancy which is the commonest cause of stillbirth, and the Dutch authorities consider that the improvement was due to the abolition of peacetime overeating. There is other evidence that a high intake of refined foods such as sugar and refined flour is the main cause of pregnancy toxæmia.

Dr. E. H. Hipsley reported some time ago in the *B. M.J.* the results of surveys of pregnancy toxæmia in Fiji. (8) Among the Fijian women studied the incidence of toxæmia in the years of study was zero, whereas in the Indian community living in Fiji it was relatively high. The Fijian

diet consists of fresh vegetables, fruits and small quantities of meat, fish and crabs, the bulk of the Indian diet is refined flour and rice.

This experience agrees exactly with a delightful essay written by Dr. Mary Jackson (9) on her work in Northern Alberta among the Metis Indians. She went there in 1930 and for the first twelve years never saw a case of pregnancy toxæmia.

But during the war the Mackenzie Highway to the northern oil fields and uranium mines was driven through the territory. The Indians were given highly paid jobs and access to imported food.

Instead of fresh meat, fresh fruit, beans, eggs and the flesh of fish or birds, they began eating white bread, sugary processed breakfast foods, puddings, sweet biscuits, candy and chocolate. For the first time cases of pregnancy toxæmia began to appear.

To quote Dr. Jackson, "So a rising standard of living, and a considerable measure of social security have been accompanied by an increase in the incidence of dental caries and a falling standard of health in pregnant and old people".

How often, as the cause of a disease is finally explained after patient, complex research, the case for dietary reform is strengthened. Here again I quote from personal experience.

In 1959 I attended a tinker woman in her second pregnancy. The tinkers have a social class zero of their own. Their men folk are seldom in constant employment and so depend on public assistance; they live a hand-to-mouth existence on the cheapest food. Thorough ante-natal care in this case was impossible as the woman wouldn't come to the surgery and was constantly shifting her tent. After having her baby in our hospital, she developed a swinging fever, and severe gastro-intestinal symptoms. I thought she had gastro-enteritis or dysentery and sent her to the isolation hospital. There examination of her blood showed that she was suffering from macrocytic or megaloblastic anaemia of pregnancy. In 1961 another tinker, who early in her pregnancy was found to be gravely anaemic, proved to be suffering from the same complaint. Both these women improved rapidly on being given tablets of folic acid. This is a vitamin which, as its name suggests, is found in green leaves of vegetables and to a lesser extent in wheaten flour; it is easily destroyed by cooking. Attention to its action was first published by Dr. Lucy Wills in 1938 (10) when she was studying this megaloblastic anaemia in Bombay among people whose diet consisted mainly of white bread and polished rice. The diet of my tinker patients is probably not much better. Folic acid is essential for the normal production in bone marrow of the blood's red cells. Without it cell production becomes abnormal and the circulating red cells progressively fewer.

But more recently it has been shown that folic acid deficiency is also associated with some cases of premature separation of the placenta and deformities of the foetus. (11) The former carries high mortality for the baby and grave dangers for the mother.

This vitamin is related to nucleic acid of cell nuclei and is essential for growing tissue, hence the extra need for it and its tremendous importance throughout pregnancy. Studies (12) have shown that deficiency precedes manifest anaemia. A recent survey by bone marrow puncture of a random group of pregnant women showed that no less than 25 per cent of subjects showed signs of megaloblastic or abnormal cell development. Deficiency of this vitamin in pregnancy is

thus fairly widespread especially among Social Class V.

So advice to pregnant women to eat whole wheat bread and one raw salad dish becomes not the ravings of a crank, but sound dietary advice based on most recent research. The enterprising drug firms have been quick to develop a pill containing both folic acid and iron and these are being routinely prescribed in many ante-natal clinics. But I have read of no authorities questioning the habit of putting in a pill essential food factors which should come from our plates.

Coronary Artery Disease

I wish to turn now to one of the most terrible epidemics of modern times, coronary artery disease. (There is no general agreement among medical authorities about the cause of tremendous increase in the last three decades, of disability and death due to this disease.)

One fact is undisputed -- primitive races, having as yet no contact with "civilised" foods, show an almost complete absence of this heart disease below 60 years of age: but when these same people have access to "civilised" food they start getting the disease. (13) An interesting example of this was recently published in *The Lancet* (14), giving information about the changed dietary habits in Israel of settlers in the Yemen. Newcomers from the Yemen had been shown to suffer much less from coronary heart disease, high blood pressure and diabetes, than did their fellow Yemenites who had settled in Israel for more than 25 years.

Doctors Cohen, Baily and Poznanski, who did this work, suggested that the chief cause for this deteriorating health might be the increased consumption in Israel of sugar. In the Yemen no refined sugar was taken by the families studied, whereas when they settled in Israel it formed about 20 per cent of their carbohydrate; in Israel they consumed more vegetable oil. Otherwise their diets were broadly similar.

My own feeling is that fats do not play an important part in the cause of coronary thrombosis and that, when the final truth is exposed, this disease will be yet another example of -- to quote Cleave -- "the saccharine disease" (15) -- a condition due to diets over-heavy with refined carbohydrate.

If dietary factors cause degeneration of arterial walls it might be expected that other tissues in the same patient would also be affected by degenerative processes.

Diet, Stress and Heredity

Occasionally studies of individual cases for which the G.P. is so well placed may be as revealing as the wider surveys of the epidemiologist.

I followed the cases of two men with serious degeneration of the intervertebral discs of their spines and both later developed fatal coronary artery blockage. I believe that the causes of these two quite separate conditions is the same dietary inadequacy. Degeneration of intervertebral discs seems to be another condition on the increase and it is my opinion that the main cause is inadequate or unbalanced intake of minerals and possibly lack of protein or vitamin factors.

Another thing I have noticed is the frequency with which, on examining many of the people who succumb to coronary thrombosis while on holiday in our practice area, the tell-tale scar of a gastrectomy -- that is the operation to "cure" duodenal ulcer -- is found in the same patients. This is an impression with no figures to back it up, but Fry (16), in his practice near London, has given statistical evidence to suggest that there is an association between peptic ulcer and coronary thrombosis.

"But wait," the protagonists of psycho-somatic medicine will say at this point, "the association, if it exists, between these two diseases is because both were caused by the same emotional stress."

My reply would be that the body and mind were built to withstand both physical and mental stress. I sometimes wonder if some people in this Britain of 1965 couldn't do with a bit more stress! I think of the parable of the two houses, one built on sand, the other on rock. When the storms of stress blow hard, the inadequately fed organism, nourished on the deprived foodstuffs of today will wear out or collapse. An adequately nourished organism will stand.

Probably hereditary factors determine which system or organ will break down first when the individual is exposed to adverse dietary factors.

Two bachelor brothers lived on a hill farm. They were not over-intelligent and the squalor of their kitchen was terrible to see. Their feeding arrangements consisted in getting from the weekly van what could satisfy their hunger with the minimum of trouble and white bread with jam, tea, tinned milk and tinned meat seemed to be the main items on the menu. Two years ago one brother developed a painful leg. He was found to have profound anaemia and massive haemorrhages typical of scurvy. But the other brother was unaffected, possibly his metabolism was better adapted to utilising the slender supplies of available Vitamin C.

These two brothers might be termed modern-day primitives, their small farm from which they seldom strayed is surrounded by luxuriant growth of green things, mostly nettles and other weeds. What a sad reflection that they had lost even the instinctive sense to cultivate a few potatoes or turnips.

Not far away by the road, an old lady almost ninety sits by her fire and speaks, as is usual in the aged, of the days gone by and deplures -- again as old people do -- present day customs. We can ignore her opinions, if we like, as being the ramblings of senescence, but her account of the nutrition of her childhood is interesting. "We had plenty of everything on our farm," she has said to me. "We had cows and sheep and hens. We made lovely cheese and lots of fresh butter." I know the old lady's farm. The pastures have gone out of cultivation, and some of them have been blotted out by the Forestry Commission's economic, dark green conifers. The farm house is the weekend cottage of a professor of economics from a distant university.

The picture of the decay of the Highland's vigorous rural economy and its inhabitants is a depressing indictment of our modern age.

The Remedy Is Too Simple

The other day I came across a remarkable echo of "The weakness of the remedy lies in its

simplicity". James Lind, the Portsmouth Naval Surgeon who had suggested that scurvy among sailors could be prevented by a ration of lemon juice, wrote, "Some persons cannot be brought to believe that a disease so fatal can be prevented by such easy means. They would have more faith in an elaborate composition dignified with the title of an anti-scorbutic golden elixir or the like".

Although we have seen in recent decades a tremendous expansion of human knowledge of material things, I doubt if we have matched our increase in knowledge with a deepening of our wisdom.

Over huge tracts of our lovely country we have created an appalling urban environment which rots our lungs and starves our souls. In Scotland we have created wilderness where once was cultivation and ruins where once was community.

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