

*See Hows Book
Page 76.*

Observations
on the
EARLY PUBLIC HEALTH MOVEMENT
in
SCOTLAND



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INTRODUCTION.

The observations which follow represent an attempt to arrive at an understanding of certain aspects of the background to the early public health movement which seemed obscure. By all accounts the 18th century in Scotland represented a period of material progress and increasing prosperity. The economic advance continued in the early 19th century, yet the rise in the prosperity of the people did not seem to keep pace with it. The investigations into the conditions of the people in the 1830's, which played such an important part in the sanitary reform movement, indicated an actual deterioration in welfare for many of the common folk. This association of increasing economic power and diminishing prosperity seemed anomalous at first glance: and the fact of a break in the upward trend of general prosperity was difficult to accept without further study.

In attempting to understand these difficulties, the first step was to examine events during the 18th century to find out whether the supposed improvement in the welfare of the people during that period was genuine. For this purpose the increase in population which took place during that century was selected for special study, and an attempt was made to discover the causes of this increase. The next step was to look into conditions in the early 19th century to find out whether or not a deterioration actually did take place at that time. For this purpose certain trends of the death rates and the incidence of disease were examined: and the environment and financial condition of parts of the population were investigated. Finally an attempt was made to arrive at an understanding of the history of some of the early developments in public health reform in Scotland in the light of such facts as had been elucidated.

SECTION I

OBSERVATIONS ON THE CAUSE OF THE
INCREASE OF POPULATION DURING THE 18TH CENTURY.

In this section the increase of the population of Scotland during the 18th century is discussed. Certain factors which operated to bring about this increase are reviewed, and an attempt made to assess their relative importance. In particular an outline is given of the improvement in agriculture which took place especially towards the end of the century, and stress is laid upon the importance of the resulting rise in the general subsistence level and standard of life, as a cause of increased population. Certain medical developments are discussed, and the trend of certain diseases shown, from the point of view of any reduction in the death rate which they might have produced. The section concludes with the suggestion that a fall in the death rate was the immediate cause of population increase.

THE INCREASE IN POPULATION

During the 18th century there was of course no census machinery in the modern sense. We are therefore forced to depend for our figures upon certain estimations of the population which were made at intervals of roughly fifty years during that period. In 1707 at the time of the Union of the Scottish and English Parliaments the population was estimated in Parliamentary records at 1,048,000. There is no accurate information regarding the population before that date; indeed the only estimation concerning earlier times seems to be one which gives the population of Scotland in 1250, during the reign of Alexander III, as 600,000.⁽¹⁾ It is regarded as very unlikely that there can have been any appreciable increase in numbers in the hundred years preceding 1707. It is legitimate therefore to regard the rise in the population during the 18th century as being due to new developments during that period.

The next estimation we have is in Webster's Account of the Number of People in Scotland in the Year 1755.⁽²⁾ The Reverend Alexander Webster, who was one of the ministers of Edinburgh, obtained his information from the parish ministers of the country: he gives the numbers of the people as 1,265,380. Thereafter there is nothing until the publication of the Statistical Account of

1794.⁽³⁾ This remarkable work was edited and sponsored by Sir John Sinclair.[‡] Returns were obtained from the ministers of each parish in Scotland, and an estimation of the population was made at 1,514,999. The next figure comes from the first official census of the United Kingdom in 1801, which showed the population as having increased to 1,599,068. By 1841 the population had risen to 2,628,957.⁽⁴⁾

During the 18th century there was not only a steady increase in the population; there was also a rising rate of increase of the population. From 1707 to 1755 the average annual increase was approximately 0.4%. From 1755 to 1795 it rose to the region of 0.5%. From 1795 to 1801 it increased to 0.8%. During the first forty years of the 19th century the annual rate of increase was over 1%, but it had already begun to fall away after 1821. Certain causes peculiar to the 19th century assisted the upward trend of population, but for the most part the 19th century increase was due to causes whose origins lay well back in the previous century.⁽⁵⁾

TABLE I

Estimates of Population at Certain Periods in Scotland.

Date	Population	Average Percentage Annual Increase
1707	1,048,000	-
1755	1,265,380	0.4
1795	1,526,492	0.5
1801	1,599,068	0.8
1811	1,805,688	1.3
1821	2,093,456	1.6
1831	2,365,114	1.3
1841	2,628,957	1.1

[‡] The 'Old' Statistical Account, as it later came to be called in distinction from the 'New' Statistical Account published about 1840, was much more than a census of numbers; each parish minister wrote an account of the conditions in his parish as they were at the time of writing and as they had been during the past century.

Sir John Sinclair, Bart. (1754-1835), who edited and inspired this unique 18th century social survey of a nation, was the first President of the Board of Agriculture, and held this office from 1793-98, and from 1806-13. As a practising agriculturist he initiated sheep-shearing, and introduced improved methods of tillage and new breeds of live-stock into Northern Scotland. (Concise Dictionary of National Biography, London 1930).

The net estimates hardly do justice to the growth of the population, for during the latter years of the century a considerable emigration took place from all parts of the country, which reduced the rate of increase. A 'fever' of emigration is said to have affected the country at this time, especially the Highlands, whence for example between 1760 and 1783 over 30,000 are said to have emigrated. There was emigration from the Southern parts as well.

Great changes in the life of the country must have accounted for this remarkable upsurge of population. The biggest change which took place at this time was the revolution in the agricultural system which developed in many areas of Scotland during the second half of the 18th century. This development must be studied to discover what effects it had upon population trends.

AGRICULTURE BEFORE AND AFTER THE IMPROVEMENTS

Before the Improvements. (6)

In discussing developments in Scotland during the 18th century it must be realised at the outset that no statement and no description can be true for the whole of the country at any one period. In the field of social life in general, and in the field of agriculture in particular, many changes were in progress throughout the century. These changes started at different times in different places and progressed at varying speeds. Moreover the exact form which developments took differed considerably in different areas. Generalisations about the state of the country at certain periods cannot be avoided in a summary of this kind, but they must be accepted with some reserve for there would always be parts of the country to which they did not apply.

Agriculture in the earlier part of the 18th century in Scotland was organised on a traditional and outmoded basis; methods and implements were primitive and clumsy; the system of land tenure was archaic and inimical to progress; the grains and cattle used were of poor quality and low yield; the whole system was liable to periodic failures of disastrous effect.

Farmland was divided into an 'infield' and an 'outfield'. The infield was the most fertile part, and most attention was paid to its cultivation. It was constantly under cultivation, the usual practice being to sow oats and barley on alternate years. The outfield was often about six times larger in area than the infield; small patches of it were cultivated in alternating

periods of tillage and fallow, commonly three years of each. The ground was cultivated till it produced only two seeds for every one sown. Here is a description of the system written in retrospect by Sir John Sinclair at the beginning of the 19th century. "The croft, or infield as it was sometimes called, consisted of a few acres nearest the farm-house, was perpetually in crop and received the whole manure of the farm. The outfield was the open pasture land, which was occasionally ploughed in patches for oats, till exhausted and then left to rest. The whole manure of the farm being injudiciously confined to the croft land, it was necessarily enriched; but being continually in crop often became so full of weeds, as to yield but miserable returns."⁽⁷⁾

Graham has described the methods of tillage in use in certain parts of the country. "The ploughs were enormous, unwieldy constructions which, being all made of wood, except the coulter and share, could be made in a forenoon for a shilling. Each plough was drawn by four or six meagre oxen and two horses, like shelties; or even by twelve oxen - two, or three, or four abreast. As they dragged it along a whole band of men attended to keep them going. One man who held the plough required to be strong enough to bear the shock of collision with 'sit-fast' stones; another led the team, walking backwards in order to stop the cattle when the plough banged against a frequent boulder; a third went in front with a triangular spade to 'mend the land' and fill up the hollows; and yet a fourth as 'gadman', was armed with a long pole with a sharp point to goad the flagging beasts.....With all this huge cortège, a plough scratched half an acre a day, and scratched it very poorly."⁽⁸⁾

The Statistical Account has many descriptions of the primitive methods of cultivation which were in use.⁽⁹⁾ The land was divided up by the 'runrig' system into rigs for tillage. These were ridges from 20 to 40 feet wide; only the summit was ploughed and for drainage they were divided from each other by wide 'baulks' or open spaces filled with weeds, stones and water. The rigs were divided among the tenants so that a small field might be cultivated by several tenants, and a farm of perhaps 200-300 acres might be divided among as

¶ I. F. Grant states that there were at least four variations in the old ploughs and methods of yoking: the "twal ousen plough", the plough with four beasts harnessed abreast, the plough preceded by a ristle, the single stilted plough. Variations were largely accounted for by differences in soil or the surface of the land. (Grant I.F. - Social and Economic Development of Scotland before 1603. - Edinburgh 1930, p.100).

many as 18 tenants, although 8 was the usual number. The farmer was hindered by short leases and restrictions and burdens on land tenure which lingered on from feudal times. (10)

The poorest types of grains were used. The grey oats which were sown had been abandoned in almost every other country; they had an optimum yield of three grains for every one sown. Frequently the ground yielded only about 2 bolls to an acre. ^X The barley used was the primitive bere. The worst seed was reserved for the sowing. Sowing and harvest were late and the whole cycle from start to finish was at the mercy of the seasons; with the result that agriculture was of the subsistence kind, the farmer considering himself lucky if he had enough to feed his own, after paying the various dues in kind with which the primitive system of land tenure overburdened him. Indeed in the frequent bad years a tenant with 40 to 100 acres might have to buy meal for his own use.

The cattle were puny beasts of the most miserable sort. They were stalled in the wintertime when as many as the half of them might die of starvation: the winter feed was straw and boiled chaff. In the springtime at the ceremony of the 'Lifting' the cattle were carried to the pastures, for they were too weak to walk. At the spring ploughing the horses and oxen sometimes fell down from weakness. Cows yielded only 2 Scots pints ^ø per day when in milk, but failure to calf was common; (11) and the milk and butter were produced under the dirtiest possible conditions.

The rent of the land, the price of grain and other foods, and the level of wages remained almost stationary during the century 1640-1740 - a sure proof of stagnation.

The Improvements and After.

The so-called Agricultural Revolution worked a remarkable change in the primitive scene which has been outlined. The change was not sudden and the start-point and tempo varied in different parts of the country. The improvements were spread over the century 1730-1830 and beyond, and the movement took

^X The boll was a unit of measure which varied in amount in different parts of the country: at its maximum it equalled 6 imperial bushels. 12 bushels per acre of oats would be about a quarter of an average modern yield.

^ø The Scots pint equalled 2 imperial quarts.

place in two broad phases. It was the first phase - the 'old' improvements - which was started in the more progressive parts of the country by the middle of the century, and was in full swing by the end of the 18th century.

The 'old' improvements consisted of the abolition of the infield and outfield system and runrig; the growing of winter feed and the development of proper summer pasture for cattle with the cultivation of root crops, artificial grasses and clover; the employment of a scientific rotation of crops; improved breeding of cattle and sheep; the use of better implements, and an overhaul of land tenure with resulting enclosures and a system of long leases. The 'new' improvements commenced before the end of the 18th century, and received impetus from the profits to agriculture during the Napoleonic wars: these were such things as lime-fertilizing, tile drainage, hedging and building of dykes, sub-soil ploughing, the use of the reaper and the use of steam-powered machinery.⁽¹²⁾ That the process was uneven throughout the country is shown from the late start of improvements in Aberdeenshire. It is said that when the fourth Earl of Aberdeen took possession of his estates in 1805 he discovered agriculture to be in a backward condition there: he instituted the series of reforms which eventually made the county one of the most prosperous agricultural areas in Scotland.⁽¹³⁾ The revolution of agriculture was more rapidly carried out in many parts of Scotland than in England because the Scots system of land tenure permitted enclosure without recourse to expensive private Acts of Parliament, and the Scottish township of 200-300 acres was a convenient unit for conversion to a modern farm.⁽¹⁴⁾

The old primitive grains were abandoned, and new grains were imported which gave much higher yields. Turnips were introduced in East Lothian in 1735 but they do not seem to have been cultivated on a large scale for cattle feed until 40 years later. Nevertheless it is said that when a certain Dr. Rutherford in 1747 fed his cattle upon turnips, 'they grew so big that people accustomed to stunted creatures would not eat such monsters.'⁽¹⁵⁾ The native Border sheep were crossed with Lincolnshire strain in 1750, with improvement which was increased shortly after that date when the hill farmers of Roxburgh-

✓ I have been told of a man born a hundred years ago in Aberdeenshire who remembered the 'Lifting' of the cattle in his youth, and the bleeding of the cattle in lean years to provide food.

shire and Peebleshire commenced feeding the sheep on turnips.⁽¹⁶⁾ New and improved breeds of cattle were developed which could scarcely be recognised as belonging to the same species as the old stock, and winter-feeding permitted a supply of fresh meat all the year round. Whereas the little black cattle had weighed 11 or 12 stone, the new beasts weighed 24 stone. Dairy cows now might yield 8 or even 12 Scots pints (4-6 gallons) daily when in full milk.⁽¹⁷⁾ The volume of food increased enormously, and with it rose the value of rents. Rentals rose five to eight times in the 30 years after 1750. Between 1795 and 1815 the total value of agricultural rents in Scotland rose from £2,000,000 to £5,200,000.⁽¹⁸⁾

The contrast between the old and the new agriculture is repeatedly commented on in the parish reports of the Statistical Account. Sir John Sinclair himself summed up these comments. "It is delightful to place in contrast with the miserable husbandry above described, the happy state to which it has since been brought as detailed in the statistical volumes. Commons and run-riggs are now in great measure done away; farms are reduced to a regular form, and their respective boundaries ascertained; each tenant knows his own land and has it in his power to improve it; wet grounds are drained; rough grounds cleared; stone fences built; hedges made; hedge rows planted; green crops raised; new implements of husbandry introduced; judicious rotations of crops adopted, and many old prejudices which had long retarded the progress of improvement laid aside."⁽¹⁹⁾ This remarkable improvement in the agricultural economy of the country brought with it sweeping social change. Our interest is to study the effects which it had upon the condition of the people.

THE CONDITION OF THE PEOPLE

Famine in Scotland.⁽²⁰⁾

Scotland at the end of the 18th century was by no means a land flowing with milk and honey; life then was hard, and there were many who suffered want if not actual starvation. Nevertheless the contrast with the famine-stricken state of the country at the beginning of that century shows striking improvement. Primitive agriculture at the beginning of the 18th century led to periods of dearth which occurred with monotonous and devastating regularity, usually once at least in every ten years. There had been a famine in 1683; from 1693 to 1700 were the terrible 'Seven Ill Years'; 1709 and 1740-1741

were famine years. Famine also occurred in certain parts of the country in 1772, in 1782-1783 and in 1793, but by that time there were mitigating factors which limited the worst effects to the more remote parts of the country.

Of the 'Seven Ill Years' the Covenanter Patrick Walker wrote: "In the year 1694, in the month of August, that crop got such a stroke in one night by east mist or fog standing like mountains (and where it remained longest and thickest the badder were the effects, which all our old men, that had seen frost, blasting and mildewing, had never seen the like), that it got little more good of the ground. In November that winter many were smitten with wasting sore fluxes and strange fevers (which carried many off the stage)

"These unheard-of manifold judgements continued seven years, not always alike, but the seasons, summer and winter, so cold and barren, and the wonted heat of the sun so much withholden, that it was discernable upon the cattle, flying fowls and insects decaying, that seldom a fly or gleg was to be seen. Our harvests not in the ordinary months, many shearing in November and December, yea some in January and February; the names of the places I can instruct. Many contracting their deaths, and losing the use of their feet and hands, shearing and working amongst it in frost and snow; and after all some of it standing still and rotting upon the ground, and much of it for little use either to man or beast, and which had no taste or colour of meal. Meal became so scarce that it was at two shilling a peck, and many could not get it.

"Through the long continuance of these manifold judgements deaths and burials were so many and common that the living were wearied with burying of the dead. I have seen corpses drawn in sleds. Many got neither coffins nor winding-sheet.

"I was one of four who carried the corpse of a young woman a mile of way; and when we came to the grave, an honest poor man came and said, 'You must go and help me to bury my son, he is lien dead this two days, otherwise I will be obliged to bury him in my own yard.' We went, and there were eight of us had two miles to carry the corpse of that young man, many neighbours looking on us, but none to help us. I was credibly informed, that in the North, two sisters on a Monday's morning were found carrying the corpse of their brother on a barrow with bearing-ropes resting themselves many times, and none offering to help them.

"I have seen some walking about at sunsetting, and next day at six o'clock

in the summer morning found dead in their houses, without making any stir at their death, their head lying upon their hand, with as great a smell as if they had been four days dead

"These and other things have made me doubt if ever any of Adams race were in a more deplorable condition, their bodies and spirits more low, than many were in these years."⁽²¹⁾

These 'ill years' were disastrous and their effects long-lasting. Many parishes were reduced to a half or even a third of their former inhabitants. In some instances whole villages were ruined, and it was said of districts once well populated that "not a smoke remained."⁽²²⁾ The country had not recovered from this catastrophe when it was stricken by another famine in 1709. The result of these famines was that considerable areas of the country went out of cultivation and were not recovered for another 80 years. There was a dearth in 1740-1741 following a failure of the harvest in 1740; fortunately the succeeding crop was early and good, but before it came many starved, and in the autumn of 1740 riots took place in Edinburgh and the granaries were plundered.⁽²³⁾

It is important to note that in an inorganised community famine perpetuated itself. During the seven ill years some of the seasons were not too unfavourable if the farmers had had healthy seed to sow. But at that time each small community had to depend on itself for seed; sometimes seed had been eaten during the dearth, sometimes the seed left for the next year's sowing was damaged, and so one harvest failure brought failure of a second and even a third crop. There was no central authority organised to buy up and store good seed for famine-stricken areas, and even had there been such organisation, primitive roads would have made transport of the seed difficult.⁽²³⁾

During the later famines people still died of starvation, but these disasters were slowly brought under control. The active national reaction to mitigate the effects of the famine of 1782-3 makes an interesting contrast when compared with the fatalistic response to the 'ill years' of a century before.

(22) Not all the effects were tragic. The parish minister of Fordice in the county of Banff reports from a study of the records of his parish that: "for several years before the famine, adultery and fornication had been extremely frequent, to which the famine put an entire and speedy stop. Neither do these crimes seem to have abounded so much in the parish since that time." (Statistical Account for Scotland, iii.p.63) Intervepres rosae nascuntur.

The summer of 1782 was cold and stormy and ^{an} arctic frost in October of that year almost destroyed the harvest. The distress was great but the ability of the more organised community to help itself had increased. Food was imported for distribution and sale in famine areas; the American War of Independence had recently ended and naval stores of provisions, mostly peas, were available for purchase in England and America, and these helped to save the situation. In 1783 Parliament voted a sum of money to buy food for the northern counties where the distress was greatest. Improved transport made it easier to bring food to the districts stricken by dearth. In Glasgow and Edinburgh at the threat of famine the municipalities had imported grain: the new Forth-Clyde canal was stated to have been a factor in averting famine in Glasgow when grain was shipped from England, Danzig and Germany. Once again faulty seed from the miserable harvest resulted in some areas having a poor crop the following year, but it is noteworthy that efforts were made to import good seed from other parts of the country into the stricken districts. The whole attitude of the community to famine had changed; instead of passive inaction in the face of Providence, the harvest failure was accepted as a challenge to the new agriculture; indeed it led to progress by the search for new varieties of seed particularly oats which could be harvested earlier. But the danger of dearth was not past even for the South of Scotland, and in the Highlands periods of famine still occurred well on into the 19th century. (24)

Food and the People before the Improvements.

Even in the years between the famines the people were frequently on short commons. The reports of the Commissioners of the Annexed Estates after the '45 Rebellion indicate that the people were in a condition of semi-starvation, scarce able to afford the staple oatmeal of their diet, and having to fall back on coarse bere-meal: they were 'idle and unenterprising.' The main foods of the people were by now oatmeal and "knockit bere." (p) In some parts even oatmeal was

(p) Until the 17th century oats and other grains were scarce even by early 18th century standards. Oatmeal was not then the staple item of diet in Scotland which it had become in the period with which we are dealing. Meat then formed a more considerable part of the food of the people; at that time tillage was less extensive and cattle and sheep rearing relatively more important; the export of hides and skins was one of the principal industries of the country. Later, with the development of droving, live cattle were exported into England. (I.F. Grant - Social and Economic Development of Scotland before 1603. Edinburgh 1930, pp.555-6

a luxury, bere-meal being the staple, and in times of scarcity 'gray meal,' a compound of meal and mill-dust, was used. If no meal were available ready ground it was sometimes prepared in a rough and wasteful manner. A sheaf of corn would be cut, and the oats held over the pot and set on fire. So the chaff was burnt up, and the grains dropped into the pot, where they were dried and then ground in the handmill. This custom persisted in the upland parts of Aberdeen until the 1830's.⁽²⁵⁾ In times of want the cattle would be bled alive and the blood mixed with oatmeal to make a pudding. Green kail was the only vegetable used.

Meat was almost unknown in the dietary apart from the off-falls of the flock. Country towns had no butcher's shop, although it would occasionally be announced that a beast was to be killed. In Ayr, with 5,000 inhabitants about the middle of the century, not more than 50 head of cattle were killed annually. Even in Edinburgh little meat was used, and it is noted that in Haddington at one time no beast was killed except at Martinmas. A Galloway minister, writing in the Statistical Account in 1794 of his parish 60 years before, stated: 'In their general food consisted of brose, pottage, oatmeal flummery, and greens boiled in water with a little salt.....They ate little meat excepting the off-falls from their flocks which died either by poverty or disease.' Captain Burt reported that about 1754, maids employed at spinning work got 3 half-crowns a year, a peck of oatmeal for a week's diet and "happy is she that can get the skimmings of a pot to mix with her oatmeal for better commons."⁽²⁶⁾

The condition of the people was in keeping with their dietary. The traditional hardiness of the Scottish people is too well attested to have been a myth; nevertheless there is a good deal of evidence which suggests that the people frequently showed an ill-conditioned appearance and lethargic attitude which modern field studies associate with malnourished populations. Sometimes they were described as ill-favoured, dirty and lacking in energy. The traveller Topham comments on 'the extreme ugliness of the lower orders....instead of ruddy cheeks, sprightly faces, and graceful figures, we find haggard looks, meagre complexions, and bodies weakened by fatigue, and worn down by the inclemency of the season.'⁽²⁷⁾

This poverty stricken appearance of the peasantry was a common subject of comment, and their sluggishness was almost a byword. Foreign travellers tended to be unkindly in their comment, but the value of their evidence is sometimes

diminished by its evident malice. In the Gentleman's Magazine in 1766 it was said that "The common people are such in outward appearance as you would not take them at first to be of the human species, and in their lives they differ little from the brutes, except in their love of spirituous liquors.....They would rather suffer poverty than work.....The nastiness of the lower people is really greater than can be reported; their faces are coloured with smoke; their mouths are wide, and their eyes are sunk as one pulls the face in the midst of smoke."(28)

A study of the clansmen captured after the '45 Rebellion indicates an average height of five feet four inches, and a six foot Jacobite was expressly a 'large man': a proportion of the prisoners had physical infirmities.(29)

Food and the People after the Improvements.

The improved position of the people of Scotland towards the end of the 18th century was generally agreed by those who were able to remember the harder times of the past. The people were gradually raised above the bare subsistence level: improved agriculture and increasing industrial activity enabled reserves to be built up so that the country was no longer completely at the mercy of the seasons: and better communications permitted the distribution of the reserves in time of necessity.

The greatest advance was in the increased quantity of food available, and the greater certainty of obtaining it, but there was also some addition in variety. Here is an account of the dietary of the people in 1795 from Speymouth in Morayshire. "The diet of the labouring people here, and in general, all through the Lowlands of the North of Scotland, is porridge made of oatmeal, with milk or beer, to breakfast; sowans, (that is a kind of flummery made of oatmeal, somewhat soured), with milk or beer to dinner; and kail, that is greens or cabbage boiled with oatmeal to supper. With all these they use bread of oatmeal, or what is called household meal, that is some mixture of barley, rye and pease. On Sundays they have generally barley broth, with some meat in winter and butter in summer. In places near the sea-coast they have sometimes fish. Turnips are sometimes used in place of cabbage or greens; and potatoes, dressed in different ways, with butter, milk, onion, etc., are commonly one-third part of their food from the beginning of September to the end of March. This is the general run of diet of the labouring people in this part of the

country, that is, of lesser farmers, farmers' servants, and people of that class; and all the above they have in sufficient plenty..... (30)

There can be no doubt that the widespread cultivation of potatoes had played a large part in raising the general level of subsistence. The potato was later to be the subject of criticism when localities which had become completely dependent upon it were thrown into dearth with every failure of the potato crop. But the value of this easy and fruitful crop to earlier times must not be forgotten. Potatoes seem to have made their appearance in Scotland about 1725 when they are heard of in Kirkdudbright: but they were rarely grown on any scale before 1739. Before that time it had been common prejudice that they could be cultivated only in gardens.

It was after the middle of the century that large scale cultivation became common, and potatoes rapidly took their place as a staple item in the diet of the common folk. (31) They not only provided a plentiful source of food but also a useful preventative of the prevalent scurvy. It was recognised by Sir John Sinclair that "where the inhabitants live much on salted provisions, a plentiful use of these roots is of great service in preventing scorbutic complaints." (32)

Potatoes became the favourite crop for the kailyard: the cultivation of these kailyards or ^{small} patches of land was common not only among agricultural workers but also among tradesmen and artisans of small towns and villages. The ground was rented for a small sum or sometimes a farmer would let a patch of land to a cottager in return for a fixed amount of work at harvest-time. These kailyards must now have provided a substantial addition to the larder. (33)

Potatoes were first planted in the Hebrides in 1743, and although at first despised, by the end of the century they provided four-fifths of the food of the Hebridean people. (34) By the time of the Poor Law Commission of 1844, we find that potatoes were cheap everywhere; in the Highlands they were 2d. per stone, and in the Lowlands the price was nowhere more than 3d. per stone. (35)

Oatmeal was used in every possible form. No part of the grain was wasted; it might even be soaked to extract the last fraction of nourishment as in the making of sowans. (φ)

(φ) Here is the recipe for sowans from "The Practice of cookery adapted to the Business of Everyday Life" by Mrs. Dalgairn. (15th Edn. London; no date). 'Half-fill a tub, large jar, or any other vessel, with oatmeal seeds, and fill it up with milk-warm water. Let it stand till it gets a little sour, which
(contd. bottom of next page)

Porridge was of course common Scottish fare. A ploughman might eat at breakfast $2\frac{1}{2}$ lb. of porridge containing 10 oz. of oatmeal, 30 oz. of water and 1lb. of milk; he would eat more during periods of heavy work.⁽³⁶⁾

Kail brose was made of oatmeal with perhaps a little butter and the broth of green kail added: but water brose was commoner, being simply oatmeal softened with boiling water. The bread of the people consisted of oatcakes, or bannocks of barley-meal and pease. Wheaten flour only came into general use in Scotland well on in the 19th century, when it was used as flour scones: but we read in 1813 in East Lothian of "the infatuation of the lower ranks in persisting in the use of wheaten bread notwithstanding its high price" as opposed to the much cheaper mixture of oats, barley and pease.⁽³⁷⁾ In the kailyard in addition to potatoes, -turnips, carrots and onions began to be cultivated as well as the traditional kail and cabbage; and gooseberries and currants also made their appearance. John Wesley wrote in 1780 "When I was in Scotland first (1762), even at a Nobleman's table we had only flesh meat of one kind, but no vegetables of any kind; but now they are as plentiful here as in England. Near Dumfries there are five very large public gardens, which furnish the town with greens and fruit in abundance."⁽³⁸⁾ The beneficial effects of the use of these vegetables upon the health of the people were duly noted at the time.⁽³⁹⁾

But not all the additions to the dietary were thought at the time to be advantageous. The new rage of the common folk for tea was deplored; it was said that the expense of this luxury was sometimes met by foregoing more substantial food.⁽⁴⁰⁾

The use of meat became less rare although it remained a luxury. Most of the meat eaten was still salt, but after about 1760 fresh meat gradually became available all the year round. In Forfarshire in 1794 it is reported "Formerly, butcher meat was seldom or never used by the lower or middling ranks except about Christmas, but now it is no infrequent article at any season of the year."⁽⁴¹⁾

(Footnote contd. from previous page)

in warm weather may be in three or four days: then strain it through a cheese drainer, squeezing the seeds, and adding to them a little cold water to obtain all the substance from them: the liquid is allowed to stand a little, till the thick matter falls to the bottom, the thin is then poured off, and fresh cold water is added, stirring it well. The sowans, being thus prepared for boiling, will keep a week or more in cold weather: and when too sour for use, a little may be mixed with the next making, by which means it will be sooner ready. When to be dressed, pour off some of the water from the top, stir it up from the bottom, and boil the portion required, adding a little salt, and stirring it all the time it is upon the fire. It will take from 10 to 20 minutes to thicken, when it is poured into a deep dish and milk served with it."

However, the ordinary labourer would still be lucky if he saw meat even once a week; moreover, it must be remembered that there were parts of the country where the diet was still as monotonous and scanty as ever, except for the addition of the potato.

The improvement in the dietary brought with it a corresponding improvement in the condition of the people. The ministers who reviewed conditions in all the parishes of Scotland for Sinclair's Statistical Account ~~of 1794~~ are unanimous in their verdict upon the great improvement in the well-being of the people since the early days of the century. The folk looked healthier; they went about their work with a new briskness which was observed and approved by their betters.

Sinclair reviewing this evidence noted how the new agriculture had bettered the situation of the farm labourer, "owing chiefly to the following causes: 1. The difference between the price of his own labour and that of provisions is more in their favour than at any preceding period. 2. The introduction of the potato, and its general cultivation affords a vast additional supply of food to the labourer and family, and enables them to rear pigs and poultry. 3. The labourer can now depend for employment during the whole year, from the superior system now adopted, - an advantage which his father....could not always command." Sinclair reported that the situation of the farmers had advanced out of recognition. Their social status, housing and dietary had undergone a striking change, and along with this they had developed a zest for work and for new methods which put them in the front rank of farmers anywhere. (42)

Travellers who had known the old conditions were impressed with the change which had taken place. One observer in 1790 said "I travelled through some places where not many years ago the people were wretchedly poor, want sat upon every brow, hunger was painted on every face; neither their tattered clothes nor their miserable cottages were a sufficient shelter from the cold; now the labourers have put off the long clothing, the tardy pace, the lethargic look of their fathers, for the short doublet, the linen trousers, the quick pace of men who are labouring for their own behoof, and work up to the spirit of their cattle, and the rapid revolution of the threshing machine." (43)

With these improvements in diet some of the old dirt and squalor was disappearing. The household gear and clothing of the people had improved both in quantity and quality, although the clothing was perhaps already losing some

of its old picturesqueness. The parish minister of Lilliesleaf in the County of Roxburgh gives a sidelight on these changes. In his report for the Statistical Account he tells us that the traditional bonnets are vanishing as head-gear for the men.

"The dress both of the men and the women has undergone a most surprising change, within those 40 years. Thirty-two years ago, there were only 7 hats in the church, but at present there are not so many bonnets." (44)

Housing too was changing; a start had been made to provide something better than the mud hovels of the past. The dwellings of the common folk had for the most part been miserable huts, built frequently of clay, seldom slated, and commonly shared with the cow and other beasts owned by the family. A hole in the roof, sometimes surrounded at the top and a little way down into the house by a kind of wicker frame, was often the only chimney, and the window scarcely deserved its name. A great dunghill stood at the doorway. Many of these primitive huts still remained. But new cottages built were now of stone with a slate roof and proper chimneys. They usually had two rooms and often a loft for stores, sometimes a proper attic. Regular windows were a feature in the new cottages; sometimes they were hinged to permit ventilation, but often the sashed windows could not be opened so that the improved houses might be inferior from the point of view of ventilation. The family livestock had retired to their own quarters, and ^{the} dunghill had been removed from the doorway and was kept to more reasonable dimensions. The dwellings of the farmers had formerly been little better than those of the cottagers, but the new race of progressive farmers were providing themselves with well designed and solid houses. (45)

The village as it had been known from mediaeval times in England scarcely existed in Scotland, In the countryside the inhabitants were huddled together in small townships or hamlets. The planning and siting of villages was now a fashionable exercise for enterprising landlords who wished to improve their estates. Planned villages when translated into reality were usually built round the nucleus of an old township, but sometimes they were created de novo, (46)

The Highlands and Islands.

In the Highlands and Islands the primitive state of agriculture lasted long after it had come to an end elsewhere, and with it persisted scarcity of

food and liability to famine. Other causes operated to make matters worse: population grew to the limit of subsistence and beyond, encouraged by the break-up of the old system of land tenure, by the minute subdivision of the land into crofts, by the growth of the kelp industry, ^(p) and perhaps even by the industry of distilling illicit whisky. ^(*) Even as far South as Perthshire and Stirlingshire tacksmen might subdivide ground only large enough for one man, among as many as 16 families: under these conditions stagnation, want and hopelessness resulted. ⁽⁴⁷⁾

The Highlands came increasingly to depend on the potato and herring as the staple foods. As late as 1844 the Scottish Poor Law Commission Report stated:- "Scarcely a year elapses, in the course of which, at one season or another, large portions of the labouring classes in the Highlands are not more or less straitened for the means of subsistence. Their distress, on some recent occasions, is well known to have been very great. Indeed, according to their present mode of life, it must always be so in the event, either of a defective potato crop, or of an unsuccessful herring fishery, as in the case of a great majority of the population, potatoes and herring constitute their principal means of subsistence." ⁽⁴⁸⁾ In coastal areas the people had to subsist on shell fish in bad times; this was especially so before the introduction of the potato. But even in 1842 shellfish were still reported to be an essential food of the poorest in Eastern Ross; thus "the poorest class are obliged, in seasons of scarcity, to draw their subsistence from shellfish, such as crabs (partans), limpets, periwinkles, cockles, mussels; and from seaweed..." ⁽⁴⁹⁾ So great was the pressure of population on subsistence that emigration was often the only alternative to starvation for the Highlander.

Specimen Diets at the End of the 18th Century.

Certain improvements in the food supply in the second half of the 18th century in Scotland have been outlined. It is of interest to examine the dietary in more detail, and to compare it with earlier times.

Details of the diet of four families of agricultural labourers are set out. The information comes from the Old Statistical Account ⁽⁵⁰⁾ [also see

(p) The kelp industry declined rapidly after 1830.

(*) Illicit distilling was suppressed after 1821.

DIETS OF FAMILIES OF AGRICULTURAL LABOURERS IN 1794.

TABLE II

(See Appendix P 113)

Family	A		B		C		D					
	Number	Adults	Children under 13	Comments	Amount per family per annum.	Gms. per head per day.		Amount per family per annum.	Gms. per head per day.	Amount per family per annum.	Gms. per head per day.	Amount per family per annum.	Gms. per head per day.
	6	2	4	Men has "victuals" in addition to pay	104 Pecks = 832 lbs.	206.9	104 stones = 1456 lbs.	301.8	8 1/2 bolls + 3/6d. = 1250 lbs.	172.6		
					156 lbs.	38.8			4 bolls + 3/6d. = 620 lbs.	85.5		
					104 Pecks = 832 lbs.	206.9						
					6 bolls = 2688 lbs.	668.6			6 bolls = 2688 lbs.	374.5		
									18/- = 54 lbs.	7.4		
					17/4d. = 416 pts.	135.5			Estimated yield of cow 2190 pts.	390.6		
					8/- = 32 lbs.	7.9						
					14 lbs.	3.4			2 stones	3.8		

Weights and Measures.

Boll of meal = 140 lbs. Peck of meal = 8 lbs.
 " " potatoes = 448 lbs. " " potatoes = 28 lbs.

Prices (Arbitrary).

Milk 2d. per pint (Imperial)
 Butter 3d. " lb.
 Meat 4d. " "

Pls
Appendix.]

The details for the four families are set out in table form; from the table it will be seen that in the case of two families the information is fairly complete, but with the other two families there are obvious gaps. However, there is a striking similarity between the items present, which would tend to confirm these specimen diets as typical of the time. The two more complete diets have been analysed into their daily yields per head of calories and certain individual nutrients. Such an analysis is necessarily only an approximation. There are obvious reasons why complete accuracy is not possible. These diets are details of the main items, and cannot make allowance for stray bits and pieces which came to the pot. Both families had a kailyard, and although the main items from the kailyard such as potatoes are included in the diet table, there is no mention of vegetables such as kail itself which must have been grown there.

The weights and measures in which the amounts are given varied in different parts of the country: therefore an arbitrary decision had to be made to interpret them at the maximum level. Dairy produce provided another difficulty; in one family it is given in terms of money expended, in the other family we are told that there was a cow. Prices were taken arbitrarily at one quarter the level in 1840. The produce from the cow was interpreted in terms of annual milk yield at 6 pints per day, which is an average figure for an ordinary^{cow} today. These are however the difficulties which face modern nutritionists when they have to assess from secondhand evidence the food supply in backward countries: and by such standards the details listed here can be considered reasonably complete.

Table IIIa: Dietary Analysis of Two Peasant Families 1794^(*)

	Calories per person per day	
	Family B	Family D
Oatmeal	806	671
Barley meal	132	290
Pease meal	617	-
Potatoes	368	206
Meat	-	19
Milk	84	246
Butter	59	-
Cheese	14	16
TOTAL	2080	1448

(*) see foot-note over page.

TABLE IIIb (X)

Daily Supply of Certain Nutrients per head	Family B	Family D	Minus Potatoes		Minus Potatoes and Milk	
			Family B	Family D	Family B	Family D
Protein (gms.)	94	48	84	42	80	29
Calcium (gms.)	.5	.6	.4	.6	.3	.1
Iron (mgms.)	22	10	19	8	18	8
Vit. A (I.U.)	945	599	945	599	758	53
Vit. B (mgms.)	2.6	1.4	2.0	1.0	1.91	.9
Vit. C (mgms.)	102	62	220	6	-	-
TOTAL CALORIES	2079	1448	1711	1242	1627	996

Looking at the tables from the point of view of calorie yields, the difference between the two families is considerable: it is almost entirely due to the presence of pease meal in the diet of Family B: that this item was not common is suggested by the fact that it does not appear in any of the other 3 dietaries. (p) The calorie yields of Families B and D are reasonably good in view of the large number of young children involved. When estimating the balance of nutrients in the diets it is necessary to make allowance for the kail which must have been in common use. Kail is a rich source of iron, and Vitamins A and C. Making allowance for that source, the diets appear to be adequate from the point of view of the balance of nutrients.

These were diets of the end of the 18th century. It has been shown that considerable improvements in nutrition had taken place by that time as compared with the beginning of the century. Unfortunately it is not possible to compare detailed dietaries of the two periods. The part played by the potato in bringing about an increased food supply can be observed: potatoes

(X) Analytical values taken from "Nutritive Value of Wartime Foods". M.R.C. War Memorandum No. 14. H.M.S.O. London 1945.

(p) In the past attempts had been made to encourage the cultivation of peas and beans in Scotland. In certain areas their cultivation had become traditional, but they do not seem to have been a common crop throughout the country. (Grant I.F. - Social and Economic Development in Scotland before 1603. Edinburgh 1930. pp.291-2).

provide about a sixth part of the calories in one case, and about a seventh part in the other. If potatoes are cut out of the diet of Family D the calorie yield is brought dangerously low. We know also that milk yields had been much less at the beginning of the century. In the dietary analysis the nutrient balance of the diets has been examined leaving out the potatoes and milk. It is obvious that the protein intake of Family D becomes dangerously reduced with these omissions, and the protein balance is upset as the diet becomes dependent mainly upon one source, oatmeal. Without milk the calcium level drops below minimum requirements, especially for children. In Family B the protein level is maintained at a high level because of the peasemeal; but peasemeal was often imported from outside Scotland in 1794, and in many parts of the country it was probably not easily obtainable earlier in the century.

Even postulating steady supplies of food in the early 18th century it seems reasonable to suppose, on this analysis, that the diet was then below the level required for good nutrition: for it is difficult to see that the needs met by the potato, and increased milk can have been supplied from any other source at that time. However, it has already been shown that the food supplies were not steady, and the main advance at the end of the century was towards the assurance of the food supplies. Food supplies in ordinary times were probably inadequate to provide a sufficient diet for health; add to that the constant threat of dearth, and some idea is given of the condition of the people at the beginning of the 18th century, and the improvement which had taken place towards its close.

MEDICAL KNOWLEDGE DURING THE 18TH CENTURY:
THE HOSPITAL AND DISPENSARY MOVEMENTS.

In the study of the increase of population during the 18th century, it has sometimes been said that the growth of medical knowledge, by lowering death rates, may have been an important cause contributing to the upward trend; in particular it has been suggested that the growth of the hospital movement during the century was effective in this respect.

There can be no doubt that medicine during this period was steadily advancing out of the realm of black magic towards the status of a science. In Scotland that development is typified by the growing fame and stature of the Medical Schools, which is first and best seen in the case of Edinburgh. The

medical advance of that era was essentially in a development of the groundwork of medical study, more especially in the dissecting room. The physicians of the age produced no sovereign remedy for the ailments of their time, and although medical men in the Army and Navy were working upon the rules of hygiene, it was long before the lessons which they taught were applied to civil society.

Perhaps a truer estimate is rather that the improvement in Medicine was a reflection of the general improvement in the condition of the country, although it is true that the movement of medical reform had begun before the changes in agriculture. It is reasonable to suppose that there was a better standard of treatment of the sick in general, as the people were gradually relieved of the constant fear of starvation. As the standard of life was raised people must have become less preoccupied with the struggle for mere existence, and some attention could be devoted to the sick and impotent. Medical teaching became more rational, and a public grew which was more fitted to learn.

An interesting side-light on the changing attitude of the public to illness is thrown by Dr. Charles Wilson of Kelso who contrasted the diseases treated at the Kelso Dispensary in two decades 1777-87 and 1829-39. He noted that minor complaints of the digestive tract were a frequent reason for seeking treatment in the later period, whereas they were relatively uncommon in the records of the earlier periods when a higher proportion of conditions treated was serious. He takes this as a sign of rising standards of living and improving health: "it is indeed natural as the general health of appopulation improves, that many trifling complaints should become noticed, which, in the deeper and more universal misery of a less happy period, would have been considered too trivial to claim attention."⁽⁵¹⁾ Perhaps the increased use of whisky in the later period may also have affected the incidence of dyspepsia.

The Influence of Popular Books on Medicine.

It is instructive to compare two medical works which were popular among lay people at that time. At the beginning of the century appeared "The Poor Man's Physician, or the Receipts of the famous John Moncrief of Tippermalloch." This prescribes juice of water-cresses and brook-lime for Scurvy, and brimstone, with nitre, rubbed in for the Itch: useful remedies for two scourges of the period; but for the rest the book contains much nonsense.

Towards the end of the century a work of different calibre appeared, which, by contrast, illustrates the improvement in standards of medical opinion which had taken place during the century. In 1769 William Buchan, M.D., an Edinburgh trained physician, published his "Domestic Medicine" which was to become one of the classics of medical literature. He called it "Domestic Medicine or the Family Physician, being an attempt to render the Medical Art more generally useful, by showing people what is in their own power both with respect to the Prevention and Cure of Diseases". It went through nineteen editions during the author's life-time and sold over a hundred thousand copies. The quality and popularity of the lessons taught by this 18th century manual of health education and household treatment was such that its effect on contemporary standards of domestic medical care must have been considerable. In fact this book was probably a principal means whereby advancing medical thought was able to influence the health of the people at that time. Buchan aimed his work at the educated laity, the local gentry and their ladies, the clergymen, and other professional people. These were the people who could help the common folk in distress and who must spread enlightened ideas regarding the treatment of disease and the preservation of health if quacks were to be confounded and traditional superstitions banished. Every educated man was to have a medicine chest stocked with simple drugs which are listed by Buchan, so that he might help the people of his neighbourhood.

If quackery and superstition abounded, the medical profession was itself partly to blame. Medicine must come out into the open if it was to play its full part in improving the health of the people. Buchan exhorted medical men to abandon their pose of mystery. "The affectation of mystery may, for a while, draw the admiration of the multitude, but will never secure the esteem of men of sense; and it will always occasion suspicion in the minds of the more enlightened part of mankind.

"Every attempt therefore to monopolize or conceal any thing that relates to the preservation of health or the cure of diseases must not only be injurious to the interests of society, but likewise detrimental to the medical art. If medicine be a rational science, and founded in nature, it will never lose its reputation by being exposed to public view. If it be not able to bear the light, it is high time that it were exploded."(52)

Much ill-health was preventable and much could be done by teaching individuals simple rules for preservation of health. "As all men are liable to disease, and equally interested in everything relating to health, it is certainly the duty of physicians to show them what is in their own power both with respect to the cure of the one and the prevention of the other. Did men take every method to avoid diseases, they would seldom need the physician; and would they do what is in their own power when sick, there would be little occasion for medicine. It is hard to say if more lives are ^{not} lost by people trusting to medicine, and neglecting their own endeavours, than all that are saved by the help of physic.

"We do not mean that all men are to be made physicians. This.....would be an attempt as ridiculous as it is impossible. We only mean that they should be taught the importance of due care for the preservation of health, and of a proper regimen in diseases. These they are certainly capable of understanding, and all the rest is of small account."(53)

Unfortunately effective preventive measures were often outside the scope of the individual; and public authority which could have taken effective action did not do so. "Though we have endeavoured to point out the causes of diseases, and to put people upon their guard against them, yet it must be acknowledged that they are often of such a nature as only to admit of being removed by the diligence and activity of the public magistrate. We are sorry, indeed, to observe, that the power of the magistrate is very seldom exerted in this country for the preservation of health. The importance of a proper medical police is either not understood, or very little regarded. Many things highly injurious to the public health are daily practised with impunity, while others absolutely necessary for its preservation are entirely neglected.

"Some of the public means of preserving health are hinted in the General Prophylaxis, as the inspection of provisions, widening the streets of great towns, keeping them clean, supplying the inhabitants with wholesome water, etc., but they are passed over in a very cursory manner, as it was intended to have added an appendix concerning the advantages of a proper medical police. This, however, was found impracticable."(54)

The quality of the book is in keeping with its objects. Sound advice is given on the management of the common diseases of the time: fevers, ague, pneumonia, whooping-cough, measles, scrofula, etc. There is a section on industrial diseases to which mechanics were exposed for "Their valuable lives

are frequently lost for want of due attention to circumstances which to themselves and others may often appear trifling."⁽⁵⁵⁾ The importance of this book both as a sign of improved standards of living and as a guide to further improvement is perhaps best illustrated by the excellent sections on infant and child care. A period as medical adviser to the Foundlings Hospital ^{established by Parliament} ~~at~~ ^{in York} ~~at~~ ^{at} Ackworth had impressed Buchan with the fact that the terrible infant and child mortality of the times was often the result of neglect of simple measures of health: for "almost one half of the human species perish in infancy by neglect of proper management."⁽⁵⁶⁾ The most important measure to combat this neglect was education of those naturally responsible for the care of children.

"It is indeed to be regretted that more care is not bestowed in teaching the proper management of children to those whom Nature has designed for mothers. This, instead of being made the principle, is seldom considered as any part of female education. Is it any wonder, when females so educated, come to be mothers that they should be quite ignorant of the duties belonging to that character.....

"Did mothers reflect on their own importance and lay it to heart, they would embrace every opportunity of informing themselves of the duties which they owe to their infant offspring. It is their province, not only to form the body, but also to give the mind its most early bias. They have it very much in their power to make men healthy or valetudinary, useful in life or the pests of society.

"But the mother is not the only person concerned in the management of children. The father has an equal interest in their welfare, and ought to assist in everything that respects either the improvement of the body or mind. It is a pity that the men should be so inattentive to this matter.....

"Nor have physicians themselves been sufficiently attentive to the management of children; that has been generally considered as the sole province of ^{old} women, while men of the first character in physic have refused to visit infants even when sick.....Were physicians more attentive to the diseases of infants, they would not only be better qualified to treat them properly when sick, but likewise to give useful directions for their management when well."⁽⁵⁷⁾

The book gives sane advice on the clothing, diet and exercise of children and the management of their ailments. Buchan deplores the practice of setting children of tender years to work in manufactures. "There are few employments,

except sedentary ones, by which children can earn a livelihood; and if they be set to these too soon, it ruins their constitutions. Thus, by gaining a few years from childhood, we generally lose twice as many in the latter period of life and even render the person less useful while he does live."⁽⁵⁸⁾

Buchan has useful advice to give on midwifery, although curiously enough he is no enthusiast for the man midwife. This was despite the fact that Scotland had been early in the field with attempts to raise the midwifery from an old wife's pastime to a science practiced by medical men. The great William Smellie, with his improved forceps and his "Treatise on Theory and Practice of Midwifery" of which the first volume was published in 1752, had already set obstetrics on its modern path. But Buchan inveighed against the ravages wrought by primitive midwifery. "Women are often hurt by the superstitious prejudices of ignorant and officious midwives. The mischief done in this way is much greater than is generally imagined; most of which might be prevented by allowing no women to practice midwifery but such as are properly qualified."⁽⁵⁹⁾

It would be impossible to estimate the effect which Buchan's work had upon the health practices of the times but it must have been considerable, especially in its influence on standards of child care. No estimate of the attitudes and practices of his own and subsequent generations would be accurate which failed to take into account the fact that this best-seller came to be a much used handbook in well regulated families; nor must it be forgotten that many of the men who were to take part in later reforms had been brought up in homes influenced by this remarkable book.

General Practice.

Consideration of the amount of medical care available to the rural population shows once more the impossibility of generalizing for the whole country. There are frequent complaints from parish ministers writing for the Statistical Account, that there were few doctors to provide for the people; but many of these reports came from the Northern parts of the country. On the other hand, McCrackan, in a recent careful research, has pieced together a clear picture of general practice in the border county of Roxburgh during the second half of the 18th century, and has revealed a surprisingly generous distribution of doctors among the population. Moreover he shows that the

situation improved as the century advanced. In 1795 there was one doctor to 1390 inhabitants in the county, whereas during the period 1750-70 there was only one doctor to 1840 inhabitants, and in the meantime the distribution of doctors had improved in addition to the increase in their numbers. In the Border counties of Roxburgh and Berwick at least, the amount of medical attention available was considerable for the times, and the Kirk Sessions there were fairly active in their duties to provide medical relief for the sick poor. It must however be remembered that Roxburghshire and Berwickshire cannot be taken as typical of Scotland as a whole for they were among the most progressive and richest areas in the country at that time. (60)

The Hospital Movement.

The influence of the growing hospitals was to become increasingly significant, but as yet they were small: and their most important function was to provide a teaching ground for the new school of Doctors. From our point of view they are perhaps most interesting from the knowledge they give us of the growing sense of responsibility in the community which built and developed them: they must also have served an invaluable purpose in teaching the civic leaders, who helped to establish them, some of the problems and needs of the time.

Since the Reformation there had been no hospital provision for the sick and infirm. At the end of the 17th century the plan was formed in the College of Physicians of Edinburgh of founding a complete medical school in the city, and this necessitated the provision of a Hospital. In 1729 the Edinburgh Infirmary was started with accommodation for six patients. In 1738 building was begun on a new hospital to provide room for 228 sick, which was opened in 1741. All Edinburgh and the surrounding country joined in a remarkable response to the project. Lord Provost Drummond gave a lead for the Town Council. The Assembly of the Church of Scotland ordered collections to be made at all church doors: this part played by the only representative national body of the time is noteworthy. Societies in Edinburgh contributed money. Merchants gave building materials; farmers and carriers supplied carts, and mechanics and labourers gave many days work for nothing. In Glasgow we see again the interest of the civic leaders. A Town's Hospital was founded in 1733: it was maintained by the Town Council, the Merchants House, the Trades-

House and the general Kirk Session, which contributed to it in definite proportions. The members of the Faculty of Physicians and Surgeons gave their services free. The Glasgow Royal Infirmary was opened in 1794 when the Town's Hospital had become inadequate for the growing needs. In Aberdeen a public meeting of citizens was convened in 1739 by the Town Council to moot the idea of building an Infirmary and a Workhouse. The plan was approved by the citizens, and a civic dignitary, the Convener of the Trades, was sent to Edinburgh and Glasgow to study the hospitals there. He prepared plans, and the Infirmary was opened in 1742 with six beds, which were increased shortly after the middle of the century to eighty.^(φ) Other towns in Scotland followed the lead. The Dumfries and Galloway Infirmary was founded in 1776. The Montrose Royal Infirmary and Dispensary was founded in 1782. Dundee Infirmary was opened in 1798. Houses of Recovery were added to existing dispensaries in Paisley and Greenock in 1805 and 1807 respectively. The Northern Infirmary at Inverness was founded in 1799, and it served the whole of the North of Scotland for more than a century. In Elgin, Grey's Hospital was opened in 1819. In Perth the Infirmary was opened in 1838.⁽⁶¹⁾

Although these hospitals are described as voluntary, it is significant to note that in their foundation and early running they came as near to being municipal foundations as the organisation and views of the times would permit. Indeed in the case of the larger hospitals such as Edinburgh Infirmary, they were almost national institutions from the start. The subscriptions which raised them were akin to voluntary taxes; the same methods were employed at that time to raise money to build roads, bridges and harbours which today would be regarded as public works.

The growth of Asylums for the Insane is significant as a pointer to an increasing feeling of humanitarianism. The Montrose Asylum founded in 1779 was the earliest; the Aberdeen Asylum was founded in 1798; the Royal Edinburgh Asylum was chartered in 1807; the Glasgow Asylum was opened in 1814; that

^(φ) Arrangements made by some parishes to ensure treatment for their sick foreshadow modern schemes. An Aberdeenshire reporter to the Statistical Account stated "there is an excellent infirmary at Aberdeen, which is of great service to the poor of all the neighbouring parishes. An annual collection is made at the church-doors for that infirmary, which entitles the poor to medical advice and assistance, when they labour under any bodily distress; and likewise to proper accommodation, while their cure is in progress." (Statistical Account of Scotland, Edinburgh 1791-99, XV, 223.)

in Dundee was founded in 1812; the James Murray's Royal Asylum, Perth, and the Crichton Royal Institution at Dumfries were opened in 1827 and 1839 respectively. (62)

The Dispensary Movement.

The Dispensary Movement is of the greatest interest. It developed towards the end of the century to meet the needs of the sick poor, and in the towns it came to provide a valuable defence work against the ravages of the new industrialism. The first of these, was the Royal Public Dispensary in Edinburgh; Dr. Andrew Duncan was largely responsible for its foundation in 1776: although Duncan was also one of the first in Scotland to study the subject of Medical police, it was his interest in teaching which directed his attention to the opportunities for clinical experience lying outside the Royal Infirmary, and his Dispensary was developed primarily as a medical teaching centre. With the growth of the town and the increase in the number of sick poor more provision became necessary, and the New Town Dispensary was opened in 1815. In Dundee and Montrose dispensaries were founded in 1782. At Paisley a dispensary was opened in 1786. In Greenock a dispensary was instituted about the beginning of the 19th century. (63) In Ayr the town was divided between five dispensary surgeons who visited the sick at their homes, drugs being provided by a dispensary apothecary. The Stirling Dispensary was founded in 1831. In Inverness a Town Dispensary was provided in 1832. (64) In the first half of the 19th century and beyond, these dispensaries, although they were sometimes not well organised for the task, (¶) had to bear the brunt of the epidemic disease which destitution and overcrowding brought in their train, while the community fumbled towards some more adequate provision.

It is of course difficult to assess accurately influences so intangible as those which resulted from the growth of medical knowledge and the improving hospital and other medical care of the 18th century. No doubt their civilising effects were great; by educating a public opinion borne upwards by rising standards of life, they taught the need for greater activity in the face of disease formerly accepted fatalistically as the judgement of divine wrath; but it seems improbable that they can have had much influence in pro-

(¶) See pages 82-84

ducing so vast a change as the increase in population which took place during that period. It would be more accurate to suggest that they prepared the way for steps which lessened the ravages of disease on the increased population in the next century.

SOME COMMENTS ON CERTAIN DISEASES

In considering the origins of the increase in the population during the 18th century there is little to be gained from a detailed study of the causes of death among the people. For most of the diseases no specific remedies were known. If the mortality rate from them diminished it was mainly due to the improved conditions of life which came about towards the end of the century. Typhus was already endemic in the country, and flared up into epidemics in association with the frequent famine periods.^(*) Epidemics of bloody flux and dysentery occurred once or twice in the century. Putrid sore throat is noted as a cause of illness and death especially among the young, by some of the contributors to the Statistical Account of 1794. Scrofula was a constant cause of ill-health and mortality. In the Statistical Account there are references which suggest that it had become commoner at the end of the century than it had formerly been; increased use of milk may have been a factor in bringing about this increase. From the same source there came reports that consumptions were more frequent at the end of the century especially among the young; at the time the increased employment in manufactures, particularly linen weaving and spinning was suggested as a cause.⁽⁶⁵⁾

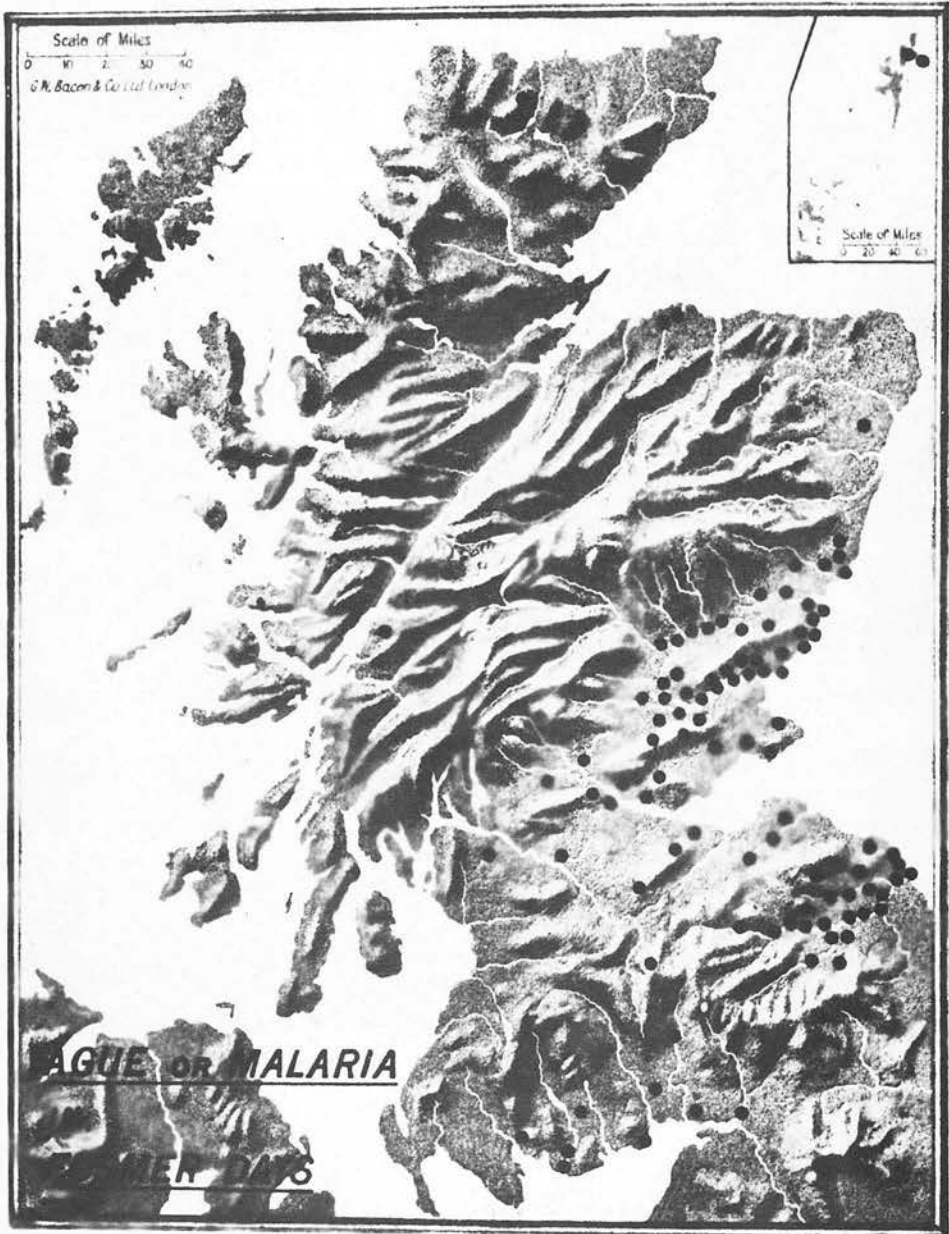
We can note the waning of certain diseases during the century. There was one which disappeared completely. This was Sibbens. Sibbens was an infectious disease said to have been introduced by Cromwell's soldiers. It was characterised by sore throat, glandular enlargement, skin pustules and hard reddish lumps in the skin, and is thought to have been identical with yaws. It was common in the South West of Scotland early in the period, but it gradually died out.⁽⁶⁶⁾ The gradual disappearance of malaria is worth studying in more detail.

(*) The traditional Sunday exercise of visiting the sick was deplored and preached against from the pulpit as a frequent means of spreading the fever. (Sir John Sinclair - Analysis of the Statistical Account of Scotland. Edinburgh 1831, p.157. Statistical Account of Scotland XIV, 234.)

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**DISTRIBUTION OF AGUE OR MALARIA IN SCOTLAND IN
THE 18th CENTURY.**

Each dot indicates a parish where Ague was common.

(From "The Influence of Man on Animal Life in Scotland." Cambridge 1920).

Professor Ritchie says (p. 509) "Since the map was prepared I have found, from further investigation of original records, that in the late 18th and early 19th century ague was very widely distributed, though less common than in the Lowlands, in Aberdeenshire and the neighbouring counties.

The Decline of Malaria. (67)

Ague or malaria was one of the scourges of Scotland which although prevalent during most of the 18th century, had almost died out by the end of that period. The map appended shows some of the parishes where cases of ague were common. The disease was common in the Lowlands and Midlands: in Berwickshire, Kirkcudbrightshire and Roxburghshire, and north to Forfar and Kincardine; it was also widely distributed, although less common, in Aberdeenshire. It was most prevalent in certain areas such as the marshy Carse of Gowrie. The ague was essentially an affliction of the farm labourers who worked in the fields, but where it was endemic children were also commonly infected. (68) It seems to have been incapacitating in its effects, for at certain times of the year, especially the important spring ploughing season, its ravages seriously hindered farming operations. There is much evidence of its effects in former times in the reports of the parish ministers in the Statistical Account of ¹⁷⁹¹⁻¹⁷⁹⁹ ~~1794~~, but these reports are unanimous in agreement that at the time of writing the disease had almost disappeared. About 1734 it was very common in Linlithgowshire, and about 1740 to 1750 in Forfarshire and Kincardine; about 1760 it was "very prevalent" in Perthshire.

In the parish of Kirkden in Forfarshire about 1764 the ague "was so general that many farmers found it difficult to sow and harrow their lands in the proper season, owing to their servants being so much afflicted with it." (69) In Berwickshire the ravages on the labourers were such that sometimes the women had to do the heavy work of ploughing. (70) In the parish of Abernyte in Perthshire about 1760 "if a farmer in the spring wanted four of his cottagers for any piece of work, he generally ordered six, knowing the probability that some of them, before the work could be finished would be rendered unfit by an attack of the ague." (71)

By 1794 the scene had changed. From the Statistical Account report on St. Vigean in Forfarshire comes the following. "For many years after 1754, agues were so common in this parish that the incumbent has often seen, in the months of March, April and May and sometimes in Autumn, from fifteen to twenty-five persons in that distemper. He does not remember to have seen a single person in the Ague for twenty years past." Here is a report from Perthshire. "The ague which used greatly to prevail here as well as in other parts of the Carse of Gowrie, is now hardly known." (72)

The records of the Kelso Dispensary show that in 1780, 162 cases of ague were dealt with out of a total of 549 cases treated at the Dispensary during that year. By 1787 the number of cases of ague had declined to 55 out of a total of 621. In 1790 there were only 16 cases of ague out of a total of 548; and Ritchie has shown that after 1797 there were no more than ten cases reported in any year. After 1840 the cases of ague had ceased altogether.⁽⁷³⁾ Dr. Charles Wilson who worked at the Kelso Dispensary and analysed its records pointed out that during the period 1777-1787 ague had provided 14.05 per cent. of all cases treated there, whereas during the later decade 1829-39 it provided only 0.16 per cent of the cases. The area round Kelso had been thoroughly drained in the interval between the two periods.⁽⁷⁴⁾

The remarkable disappearance of the disease is associated in the minds of the Statistical Account of the chroniclers/with the agricultural improvements which had taken place. The minister of Kirkbean in Kirkcudbrightshire had a special case to record. "Formerly many of the inhabitants went into Lincolnshire for employment during the harvest, and returned infected with this disease, now they have work sufficient to employ them in the parish and the disease is seldom a complaint."⁽⁷⁵⁾ Yet the explanation that the disappearance was due to draining was not easy to accept at that time, for the ague was vanishing from areas where little or no drainage had yet taken place. A Kirkcudbrightshire minister from Borgue parish could not accept this explanation, for although the ague was gone "no mosses or marshes have been drained of any consequence for many years past."⁽⁷⁶⁾ Professor W.P. Alison lecturing in Edinburgh in 1820 notes this dilemma. He remarks on the disappearance of malaria in Scotland, and observes that it "is in a great measure to be attributed to the draining of the marshy lands - but perhaps some other cause also has operated - for there is still a good deal of moist land which has not been drained.....For example in Forfarshire, as I have been told by a gentleman residing there, agues were formerly prevalent - but they are now unknown, although no improvements with respect to the land have taken place."⁽⁷⁷⁾

We know today that Anopheline mosquitoes are still found in Midlothian and Lanarkshire in the South; in Fife, Perthshire and Dumbarton in the Midlands, and in Aberdeen, Invernessshire and Sutherland in the North, although numbers are small. The modern explanation for the disappearance, apart from

the effect which the gradual increase of drainage would have in the diminution of breeding-grounds, would suggest that increase in numbers and improvement in cattle-stock was a determining factor: more especially the increased survival of cattle during the winter-time which came with improved systems of feeding. Anopheles maculipennis, which is the indigenous mosquito, prefers cattle to man, and in this way was attracted from its winter roosting-place in the habitations of man into the cattle houses.

No doubt malaria during the period of its ravages must have had a considerable effect in reducing health, and contributing to an increased death-rate from other causes especially among children, even if it was itself rarely fatal.

In the areas previously affected the improvement in health after the disappearance of the ague was duly noted. The inhabitants who had formerly been distinguished by an emaciated and jaundiced look now became more robust and longer lived.⁽⁷⁸⁾ Dr. Charles Wilson had this to say of the Kelso area: "Ague was not usually in itself a disease of great fatality, the deaths recorded at the Dispensary having been only 1.81 per cent. of the cases treated Still if we keep in view how frequently it was known to degenerate into fevers of a worse form, and how often it terminated in jaundice, 'obstructions of the viscera of the abdomen,' and consequent dropsies; or, even if we take into consideration the frequency of its recurrence, and the lengthened periods during which it racked its victims, we shall see much reason to be thankful that a plague so universal and so pernicious has been almost wholly rooted out from amongst us."⁽⁷⁹⁾

Smallpox Inoculation.

There was one medical measure introduced during the century for which great claims were made. That was smallpox inoculation with the live smallpox virus. It became fairly widely practised throughout the country, and its protagonists thought that it had reduced the number of deaths from smallpox considerably. The smallpox was prevalent throughout the century and it was one of the main killing diseases: it was endemic and was responsible for a steady mortality every year. Approximately every seven years it appeared in epidemic form in different localities, the epidemics being often associated with the conditions of dearth which attracted typhus. Smallpox was

particularly deadly to infants and young children, and at this time it held pride of place, as the chief killer of these ages. This was especially so where the epidemics were most frequent, as in the growing towns. In the rural areas where epidemics were less frequent there were fewer immunes among the older age groups, and consequently a more even age distribution of the deaths. In Kilmarnock between 1728 and 1764 smallpox was responsible for one in six of all deaths, and nine-tenths of the smallpox deaths were among infants and young children.

TABLE IV

Deaths at ages from Smallpox,⁽⁸⁰⁾
Kilmarnock, 1728-1763.

Deaths at all ages	Under 1	1-2	2-3	3-4	4-5	5-6	Above 6	Age not stated
622	118	146	136	101	62	23	27	9

In Edinburgh between 1744 and 1753, and 1754 and 1763 the deaths from smallpox were 1 in 9.6, and 1 in 9.8 for the two periods respectively: and this was at a time when more than half the annual deaths in the town took place in children under five years.⁽⁸¹⁾

In Glasgow between 1783 and 1800 the ratio of deaths from smallpox was the highest of all.

TABLE V

Proportional Mortality Rates,⁽⁸²⁾
Glasgow, 1783-1800

Six year Periods	Total No. of deaths	Percent. of deaths due to fevers	Percent. of deaths due to smallpox	Percent. of deaths from all causes under 5 yrs. of age
1783-1788	9994	12.65	19.55	50.06
1789-1794	11103	8.43	18.22	53.28
1795-1800	9991	8.24	18.70	51.03

Of the prevalence of smallpox throughout rural Scotland there is ample evidence in the writings of the parish ministers in the Statistical Account of 1791-9. They were almost without exception strong advocates of inoculation. Most of them could point to a diminution in the incidence of smallpox in the

years immediately ^{their report} preceding /, and this they attributed to inoculation.

Inoculation was upheld also because the modified smallpox which it induced usually left the face unscarred and did not cause blindness, "thus preventing "great numbers of objects from becoming a burden on Society." (83)

Inoculation was introduced into Scotland in 1726, but there seems previously to have been a crude form of inoculation carried out in remote parts of the country. In a medical paper of 1715 there is reference to a custom "in some parts of the Highlands of Scotland, where they infect their children by rubbing them with a kindly pock as they term it." Professor Munro primus writing in Edinburgh in 1765 states that in the countryside "when the smallpox appears favourable in one child of a family the parents generally allow commerce of the other children with the one in the disease: nay, I am assured that in some of the remote highland parts of this country it has been an old practice of parents whose children have not had the smallpox to watch for an opportunity of some child having a good mild smallpox that they may communicate the disease to their own children by making them bedfellows to those in it, and by tying worsted threads wet with the pocky matter round their wrists."

The practice of formal inoculation progressed slowly and fitfully. By 1765 Munro primus estimated that 5554 inoculations had been carried out in Scotland, mostly in the larger centres of population: and he attributed 72 deaths to the practice. In the 1790's in the Statistical Account sweeping statements were made by some of the contributors to the effect that it had been generally adopted and so on. The fact seems to be that the practice had been adopted and approved by the upper classes, but that the common people were more chary in taking to it. (84)

Summing up the evidence from the Statistical Account Sir John Sinclair said "Multitudes of the common people considered inoculation as criminal; - as an encroachment upon the prerogative of Providence; as tempting Providence: as implying an impious distrust of Divine Providence, and a vain attempt to alter his irreversible decrees. Many conceived it highly improper to do any act that tended to bring trouble or distress upon their helpless infants, before the appointed time, thinking that they would be guilty of ^aspecies of murder, if the event proved fatal. Impressed with these ideas they sat still

in sullen contentment, and saw their children cut off in multitudes, without any attempt to save them."⁽⁸⁵⁾ The prejudice of the common folk against inoculation was sometimes reinforced by reluctance or inability to find money for the operation which not only had to be paid for but might also lead to loss of the mother's earnings when she had to devote her time to nursing the child. Attempts were made to get over this difficulty in various ways. Sometimes the surgeon did the work for nothing, sometimes the payment was made by the Kirk Session or by charitable individuals.

Large scale inoculations usually occurred during an epidemic scare, and often when the epidemic had passed its natural zenith. Ministers complain of the lack of medical men available to carry out inoculation; and they seem sometimes to have practised the procedure themselves for want of anyone else to do it. They caused their own families to be inoculated as an example to their flocks. The practice was constantly advocated from the pulpit, and it was recommended that students for the ministry should be instructed in the art of inoculating.⁽⁸⁶⁾

The Rev. Mr. Abercromby Gordon, minister to the parish of Banff attempted to prove the case for inoculation by statistical argument. "The deaths by the natural smallpox are generally allowed to be in the proportion of one in six, in seven at the very least, but oftener one in five. Now, I presume, it will be thought moderate to compute, that not above one in forty escape having the distemper, during the course of their lives. Let it be observed, then, in the first place, there are thirty-nine to one against escaping the infection; and then there are only five chances in favour of a person escaping with life. The whole chance in his favour, therefore, are but five and one-fortieth, or six at most; whereas by authentic accounts of some late general inoculations it appears that out of 416 only one died. On other occasions the proportion has been one in 500." The same minister gives us a record of one Doctor who thought of an ingenious scheme for overcoming the popular prejudice against inoculation. "A surgeon in the North presuming that self-interest has a stronger hold on man than superstition has lately opened a policy of insurance for smallpox. If a subscriber gave him two guineas for inoculating his child, the surgeon in the event of the child's death, pays ten guineas to the parent. For one guinea subscribed he pays four guineas: for one half-guinea subscribed he pays two guineas."⁽⁸⁷⁾

Any critical attempt to estimate the effects of inoculation upon the mortality rate from smallpox is difficult. Most writers seem to be content to accept the verdict of the contemporary enthusiasts, that it had considerably reduced the number of deaths. But the more critical account of Creighton is sceptical. There were no properly recorded contemporary studies. There is no exact information regarding the numbers inoculated, or the differing methods used, ^(*) or the numbers of cases where inoculation itself resulted in the spread of smallpox - although we know that that was not infrequent. Mass inoculations usually came too late, when the severity of the epidemic was already on the wane: and we are left with the impression that perhaps it was not sufficiently prevalent a practice in any case to be truly effective, although certainly it obtained as much publicity and support as the elite of the time were capable of giving to it. ⁽⁸⁸⁾ Referring in his lectures in 1820 to smallpox W.P. Alison says that "it is impossible to root out or prevent the spreading of the disease if inoculation be permitted." But of course vaccination was practised by that time, and Alison was a keen protagonist of vaccination. ⁽⁸⁹⁾

As far as the clinical course of the disease was concerned the inoculated individual evidently stood a better chance than the individual who had incurred the disease naturally. However, there was no sort of quarantine for these inoculated people who must have been a means of spreading the natural disease during non-epidemic periods. Writing in 1837 when he was Professor of Medical Jurisprudence and Medical Police at Glasgow, Cowan stated that inoculation increased the absolute mortality from smallpox although it diminished the case mortality; "as by this practice the disease, which before its introduction, occurred epidemically only at long and uncertain intervals, was kept prevailing at all times and seasons, thereby producing a

(*) Methods of Inoculation. Sometimes the smallpox virus was inoculated with the aid of a lancet, sometimes the matter was simply applied to the skin. The use of the lancet is described by Professor William Cullen in a letter written to a young doctor in 1771. "The inoculation is better performed by a lancet whose point has been dipped in a pustule than by a thread as formerly; but if you cannot have the opportunity of preparing a lancet within a few days before your intended inoculation, you must employ a thread as usual. In employing the lancet if the matter upon it happens to be dry, you must hold it a little over the steam of warm water before you employ it. In employing it you have only to insinuate it under the cuticle without going deeper, and when you have withdrawn the lancet you have only to press down again the cuticle and tie a bit of rag upon it....." (quoted by John D. Comrie - History of Scottish Medicine. London 1932, p.429).

mortality especially among children, which could now scarcely be credited, but for the attested registers of its ravages." (90)

Finally we know that smallpox reached its highest peak as a killing disease in Glasgow, bng after inoculation had become an established practice: and its rapid wane after 1800 coincided with the increased prosperity of the Napoleonic war years as well as with the introduction of vaccination: it may be that the reduction in the mortality from smallpox noted by the parish ministers in the Statistical Account was in large part due to the increasing prosperity of the countryside, for smallpox as an endemic and epidemic disease was closely linked with conditions of want and squalor. (91)

It might be appropriate at this point to summarize briefly the history of smallpox in Scotland during the half century following the introduction of the new technique of vaccination. Almost at once following upon the introduction of vaccination it was arranged in many parts of the country that it should be carried out free for the children of the poor: thus in Glasgow this service was started by the Faculty of Physicians and Surgeons in 1801, and 14,500 vaccinations were carried out in the following ten years. (92) The introduction of vaccination coincided with the wave of prosperity created by the large public expenditure during the Napoleonic war years. The incidence of smallpox diminished rapidly throughout the country. Thus whereas in the last six years of the 18th century from 1795 to 1800, smallpox had contributed 18.7% of the deaths from all causes in Glasgow, from 1801^{to}/1806 the figure had dropped to 8.9%; from 1807 to 1812 it dropped still further to 3.9%, and from 1813 to 1819 smallpox contributed a mere 1.07% of the deaths from all causes.

This remarkable trend was not maintained. With the economic depression which followed the end of war, smallpox staged a revival. Smallpox epidemics

(Footnote continued from the previous page.)

The other method is described by Wm. Buchan, author of the Domestic Physician, who was a strong advocate of inoculation and believed that medical men should arrange for free inoculation of the poor. He gives this account of the inoculation of his own son. "After giving him two gentle purges, I ordered the nurse to take a bit of thread which had been previously wet with fresh matter from a pock, and to lay it upon his arm, covering it with a piece of sticking plaster. This staid on for six or seven days till it was rubbed off by accident. At the usual time the smallpox made their appearance, and were exceedingly favourable." (Wm. Buchan, Domestic Medicine or Family Physician. 8th Edition, London 1784, p.264.)

coincided with the frequent periods of industrial depression which characterised the next forty years; it was prevalent at the same times and for the same reasons as typhus. While typhus was receiving publicity because it killed the wage-earners and so upset the industrial and social machinery, the ravages of smallpox passed almost unnoticed because it remained essentially a killer of infants and small children. Smallpox was to the children in times of distress what typhus was to the adolescents and adults. Adult smallpox in the towns was most prevalent among the unsalted immigrants, especially the Highlanders. It prevailed in epidemic form from 1817 to 1819, from 1825 to 1827, from 1837 to 1840 and from 1847 to 1849. However it never regained its pre-eminent place as a cause of death: during the 1830's it was responsible for about 6% of the deaths from all causes in Glasgow, and its incidence had lessened even more in other parts of the country. This was despite the fact that the popularity of vaccination seems to have suffered a setback after the return of smallpox epidemics in 1817.⁽⁹³⁾

Early enthusiasts for vaccination had made rash promises of permanent immunity. When experience taught that immunity might wane and the vaccinated could develop smallpox there was some loss of faith in the magic of vaccination. Charles Wilson of Kelso pointed out that "public confidence in vaccination has been shaken and many individuals have querulously challenged the value of the discovery because it has not secured to us so large a measure of benefit as it at first promised."⁽⁹⁴⁾

CONCLUSION: EFFECTS OF THE IMPROVED STANDARD OF
LIFE UPON THE DEATH RATE AND THE BIRTH RATE.

In attempting to analyse the reasons for the population increase during the 18th century we are forced back upon one outstanding fact. The conditions of the country at the beginning of the century were so bad that they must have operated in every possible way to check the growth of the people. Scotland had just emerged from a long period of social, political and religious unrest. Since the battle of Flodden in 1513, the only respite which the country had had from wars, civil^{and} otherwise, was during the reign of James VI after he had attained control. For the sixty years before the beginning of the 18th century Scotland went through the turmoil of long religious wars and persecutions. After 1707 although Scotland had to adjust

herself to the anomaly of government - or rather, lack of it - from 400 miles away, at least she was given a long peace, undisturbed after the risings of 1715 and 1745, in which to turn slowly from a primitive and war-like economy, to the development of agriculture and commerce. Some of the effects of the famine periods at the end of the 17th century have been shown. We know what havoc dearth could bring about at a much later time when the community was able to rely on improved communications and reserves of food. We can only imagine what the effects of famine can have been in previous times, when no mitigating factors operated.

The Scottish village community of the early 18th century with its squalid mud hovels, tattered and haggard inhabitants, puny and half-starved cattle, and miserable poultry, must have resembled many settlements in the East and Middle East today: and recent population trends in these areas show how a slight tipping of the balance of subsistence over the starvation margin can bring about remarkable population increases within a relatively small space of time. In view of the gradual rise in the standard of life during the period we have considered, it would indeed be remarkable if the population had not started to increase. In the study of so large a movement as this increase in population throughout the 18th century we must look for an equally large force as the cause. The only factor which has been shown which meets this requirement is the improvement in the nutrition of the people, Increase in medical knowledge and the waning of certain diseases may have had some effect, but it can only have been subsidiary.

From general experience of the effects of an improved standard of life upon population trends it can be assumed that an immediate cause responsible for population increase was a lowering of the general death rate. Unfortunately the absence of the necessary statistical data makes it almost impossible to demonstrate this fact. It is known in the case of Edinburgh that from 1744 to 1753 the average number of annual deaths was 1270.9 for the city, whereas from 1754 to 1763 the number was 1161.3,⁽⁹⁵⁾ although the population had increased considerably in the meantime: and in the same city the death rate is estimated to have fallen from 1 in 34.37 for the decade 1780-89, to 1 in 36.55 for the years 1790-99.⁽⁹⁶⁾ It is to be expected that the improved standard of life would lower infant and child mortality rates. The terrible

mortality at these ages during the century is well known. Adam Smith's statement that "It is not uncommon, I had frequently been told, in the Highlands for a mother to have borne 20 children and not to have one alive" describes an extreme case of what must have been common in lesser degree.⁽⁹⁷⁾ In Edinburgh during the middle years of the century more than half the deaths from all causes were among children under five.⁽⁹⁸⁾ and such a mortality was typical of the towns of that time, whereas in the years 1841-43 the proportion in Edinburgh of deaths of children under 5 had fallen to one third although these years were by no means favourable.⁽⁹⁹⁾

The effects of the improved standard of life on the birth rate are even harder to estimate than in the case of the death rate. There is some hearsay evidence to indicate that the birth rate may have risen. In times of famine witnesses were impressed with the fact that the dearth lowered the birth rate, although the lost births were sometimes made up in the following years.⁽¹⁰⁰⁾ Conversely it was noted in some districts that increasing prosperity raised the birth rate. In the New Statistical Account it is said of one district that "The marriages and births in 1760-1800 have greatly increased, while the proportion of deaths is nearly the same. It was about 1760 that rapid advances began to be made in agriculture and commerce. With these the comforts of the people, and the means of subsistence were multiplied, and afforded the increased facilities of contracting marriages and rearing families."⁽¹⁰¹⁾ The development of domestic industry may have contributed to the same effect but against that must be set the growth of the bothy system of housing farm labourers,^(X) which rendered marriage difficult or impossible for many.

Some evidence as to the type of population change which had taken place can be obtained from Webster's Statistical Account. Webster had attempted to reckon the number of potential warriors in the population. For that purpose he divided the population into three age groups: the young, under 18 years of age; the fighting men, between the ages of 18 and 56, and the aged, over 56. The census of 1821 was the next enumeration of the population where it can be divided into similar age groups.^(ϕ) If the numbers of

(X) A system of housing farm-hands in quarters suitable only for single men. It was popular in certain parts of the country.

(ϕ) Sinclair in his analysis volume of the Statistical Account (Sir John Sinclair, Analysis of the Statistical Account of Scotland. Edinburgh 1831, p.157)
(continued bottom of next page)

Webster's age groups in 1755 are compared with the same age groups in 1821, certain changes are apparent.

TABLE VI

Comparison of Certain Age Groups (102)
of the Population in 1755 and 1821

Age Group	% of Total Population in 1755	% of Total Population in 1821	% Increase in 1821 since 1755
0-18	39	47	101
18-56	51	43	38
56-	10	10	66
Tot. Popn.			65

The figures arrived at by an enumeration such as Webster's must be treated with some caution, but there seems no obvious reason why they should be more inaccurate for one age group than for another. The trends shown by the table are interesting. The relative increase in the youngest age group is striking; but we can only guess whether that increase was due mainly to a decrease in mortality rates or to an increase in the birth rate. The relative decline in the age group 18-56 had no doubt been accelerated by the emigration movement. The unchanged proportion of old people suggests, as we would expect, that the population increase was not due to an increased rate of survival into old age.

We are left to conjecture on the initial cause of increase which moved a stationary population into an upward trend. The evidence which has been brought forward may permit the surmise that it was in the first place a lowered mortality, especially among the young, which initiated the increase: this lowered mortality being due to a raising of the subsistence level, and to diminishing effects from dearth. The improved conditions may later have resulted in an increase in the birth rate. In any case a population increasing in this manner would in time be further increased by rising births.

(Footnote continued from previous page).

gives a comparison by ten-yearly age groups between Webster's estimate of population of 1755 and the census population of 1811. This comparison is invalid, for Webster did not in fact divide his population into ten-year age groups. Sinclair has simply divided the population of 1755 into groups in the same proportion as the ten-year age groups of 1811.

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SECTION II

DESTITUTION AND DISEASE DURING THE FIRST HALF
OF THE 19TH CENTURY: AND THE REFORM OF THE POOR LAW

The second half of the 18th century was a period of improvement in the welfare of the country. The movement was uneven and slow; and the condition of the people at the end of it left much to be desired; nevertheless the improvement was real. The 19th century opened with a period of relative prosperity assisted by wartime spending. It is therefore surprising at first glance to read the critical accounts of the condition of the country which began to appear after 1820. The comments became steadily more gloomy and increased in volume during the 'Condition of the People' controversies of the 1830's, culminating about 1840 in the writings of the Scottish Poor Law Reformers which revealed the extent of destitution in the country, and the deplorable state of sanitation. An atmosphere of crisis is deliberately created in the mind of the reader by these writings, and he is apt to be left with the impression that some unfavourable and recent development had suddenly forced the country to the verge of catastrophe. Was there in fact some sudden deterioration in the state of the people, or were the terrible conditions revealed by the Reformers the result of some long continued process; was the state of affairs first discovered at this ^{date by} late/minds recently devoted to the problem, or had it long been appreciated and understood? These are questions left in the mind of the modern reader of the many tracts and reports of the Poor Law and Sanitary Reformers.

To both questions the true answer lies midway. The improvements of the 18th century were mainly in the rural population. It is true that the nutrition level of the people generally was raised, but the special problems of the towns remained untouched. The towns were notoriously much more unhealthy places than the rural areas and their population was steadily increasing with the growth of industry. There was some expansion in the area and housing space of the towns at the end of the 18th and beginning of the 19th centuries but the good effects were short-lived, for the growth of the towns failed to keep pace with the much more rapid growth of urban population: gross overcrowding became inevitable. The new urban population was largely supplied

from the rural areas, and the rustics who came to the towns were particularly susceptible to the diseases prevalent there. The growing industry which created these problems was itself still a new and crude machine, liable to breakdown at frequent intervals. Each hitch to industry and commerce threw large numbers into unemployment and poverty.

These events were taking place in a country which had but recently started to emerge from a primitive economic condition, and it had no social or administrative machinery adapted to deal with these new stresses and strains. Nor was public opinion sufficiently educated to see the relationship of cause and effect between the new developments in industry and the prevalent destitution. The country had a long history of dearth and disease behind it, and it was excited by the prospect of the new wealth and power brought by the Industrial Revolution. It was inevitably a long time before the ruling classes were prepared to accept new responsibilities. The worst effects of these changes were postponed for a short while by the public expenditure during the Napoleonic wars which gave rise to a temporary increase in prosperity.

It was during the period of post-war re-adjustment that the consequences were first felt in their full force. There is no doubt that destitution increased in the towns. Poverty and overcrowding brought epidemics of increasing severity and the death rates, which had been falling during the past fifty years, commenced to rise again. Moreover towns were now more populous and important places than they had ever been in the past: and so urban death rates were operating on a much larger fraction of the total population than before. The wealth and power of the nation was shifting from the countryside to the towns, and therefore their condition was now deemed worthy of increasing study. Disease and destitution might represent the hand of the Almighty, but when they began to interfere with the workings of industry it was time for men to take notice: the attention devoted to typhus fever for example was no coincidence, for it specialised in killing the wage-earner, and so injured the sacred industrial machine; moreover, it left widows and orphans to swell the ranks of paupers for whom provision of some sort had to be made. It was in this fashion that attention was aroused and the 'Condition of the People' came to be an engrossing topic in ruling circles after 1830.

Probably the Cholera Epidemic of 1831-2 was a final stimulus which helped

to concentrate that attention: for there was something dramatic about the sharp onslaught of the Asiatic Cholera after its slow and dreaded approach across the Continents; moreover cholera was less a respecter of important persons than was typhus.

Eventually the voice of Reform was heard, and decisions were made that something must be done. Disease must be conquered. In England attention became concentrated on 'Sanitary' reform to the exclusion of all else: perhaps this was because of the method of attack of cholera, perhaps it was due to the theories of epidemiology held by certain men of what we might call the Chadwick school, whose influence became decisive. In Scotland, although the repercussions of the Chadwick views were felt, attack was directed to another point. Because of the lack of an effective Poor Law, and because of the views of W.P. Alison and others, attention was devoted to the problem of Destitution as the chief cause of increasing misery and ill-health.

Reform culminated in the Poor Law Amendment Act of 1845. Much good came from this Act, but after its passage the will to reform seemed temporarily to have spent itself. Perhaps the Reformers had concentrated too exclusively upon the remedying of destitution, and probably the rulers of the day were prepared to accept only one idea at a time. Whatever the reasons, it is a fact that it was to be another twenty years before Scotland started in earnest to tackle the problems of sanitation and the control of epidemic disease.

Although the Reform Movement as such seemed to arise as a new thing and relatively suddenly, we know that for many years previously men had been studying the same problems and advocating the same remedies which the Reformers made their own. The ideas were not new: it was simply that men had at last become ready to receive them.

THE RISE OF URBAN DEATH RATES AFTER 1820

Destitution and disease increased in the Scottish towns after about 1820. This is indicated by the trend of the death rates. Dr. James Stark writing in 1847, when he was Registrar of Mortality of Edinburgh and Leith, attempted to show this deterioration in terms of statistical tables. At a later date he commented on the difficult position which the statistician faced in Scotland. A tax on the registration of births in 1783, registration of deaths in the hands of illiterate parish 'Recorders', and the growth of the Secession movement in the Kirk meant that only the registration of marriages was in any way

adequate.⁽¹⁾ The census officials in 1801 found that "no more than 99 parishes out of the 850 which have made returns, are in possession of registers: the rest having made only occasional entries therein, or keeping no register whatsoever."⁽²⁾ These facts mean that numerical data relating to the period

lacks exactness. Nevertheless the patient labour of certain workers in the first half of the 19th century has rescued a good deal of useful material.

Edinburgh was better documented than most of Scotland, and Stark's official position enabled him to collect some data which he presented in a striking manner.⁽³⁾ He was able to show that the general death rate in the city had been falling from 1780 to about 1820: indeed we know that it was falling for at least forty years before 1780. But after falling over a period of almost a century, the death rate began to rise again after 1820.

TABLE VII

Trend of the Death Rate in Edinburgh
1780-1845

	<u>One death in</u>
1780-89	34.37
1790-99	36.55
1800-09	39.50
1810-19	40.01
1820-29	38.16
1830-39	34.45
1840-45	36.22

By dividing the population in 1845 into social classes and analysing the death rates at ages for the different classes, Stark was able to show clearly the excessive mortality of the lowest classes at that time: and he postulated that it was this excessive mortality which was responsible for the unfavourable trend in the general death rate.

He divided the population into four classes: 1) Gentry and professional men; 2) Merchants, master tradesmen and clerks; 3) Artisans, domestic servants, and soldiers; 4) Labourers, porters and paupers. For the purpose of his tables he lumped the third and fourth classes together.

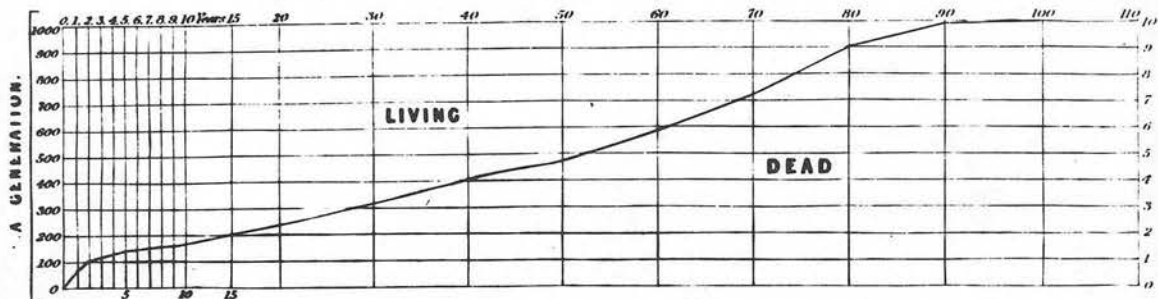
He was able to show that of every 1,000 deaths at all ages in the highest class only 72 deaths took place under one year of age, whereas in the lowest



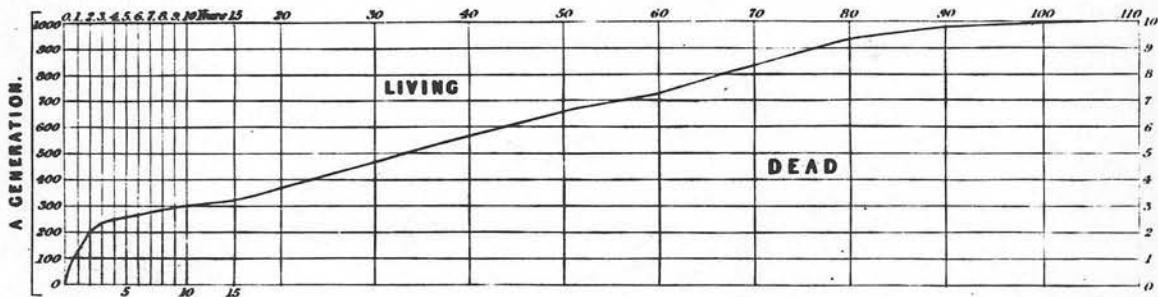
DIAGRAMS OF THE CURVES OF MORTALITY IN EDINBURGH.

Showing the numbers Dead and Living at every age in a Generation of 1000 individuals in each of the Three Classes of Society, and also in the Whole Population.

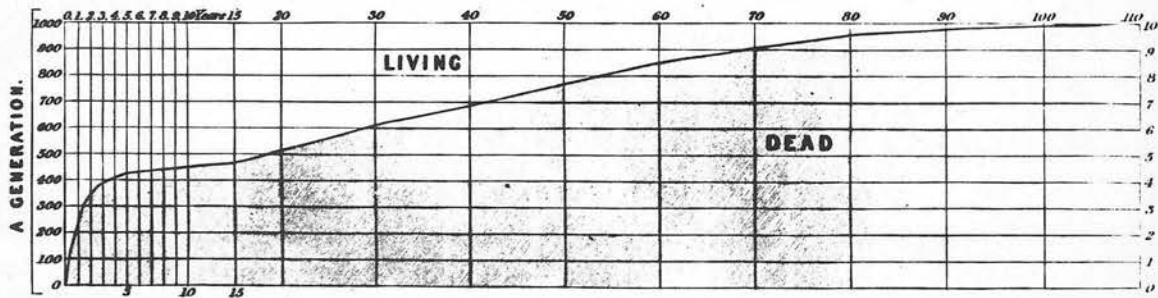
FIRST CLASS — GENTRY AND PROFESSIONAL.



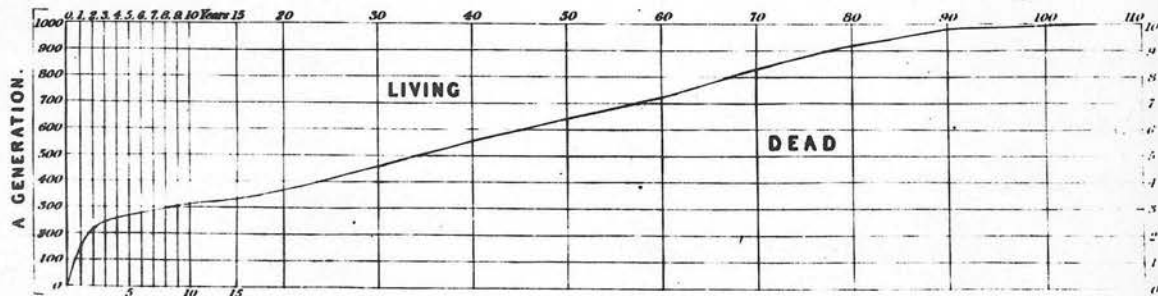
SECOND CLASS — MERCHANTS, MASTER-TRADESMEN.



THIRD CLASS — ARTISANS, SERVANTS, LABOURERS &c.



THE WHOLE POPULATION.



class there were 241 deaths under one year of age out of every 1,000 deaths in that group. In the first class the mean age at death was 47.22 years: in the lowest class it was 25.88. Half the members of the first class died out by the age of $51\frac{1}{2}$ years, whereas in the lowest class half had died out by the age of $17\frac{1}{2}$.

TABLE VIII

Number of Deaths at Ages per 1,000 Total Deaths,
by Social Class: Edinburgh 1845.

Class	No. of deaths under 1 year per 1,000 deaths at all ages.	No. of deaths under 5 years per 1,000 deaths at all ages.	No. of deaths under 15 yrs. per 1,000 deaths at all ages.	No. of deaths between 15 & 60 years per 1,000 deaths at all ages.
1. Gentry & Professional	72	140	204	383
2. Merchants etc.	127	263	326	400
3. Labourers Artisans etc.	241	427	483	357

A copy of Dr. Stark's diagram is appended to show the numbers dead and living at every age in a generation of 1,000 individuals in each of his three Social Classes in Edinburgh, and also of the whole population of the city.

Stark associated the falling death rate after 1780 with improvements in the town which were taking place at that time. This was the period of the expansion into the New Town; the population was able to spread itself over an increasing area and number of buildings: moreover at that time the water supply to the town was increased. But since 1820 the situation had been deteriorating and was continuing to deteriorate. The 1830's had of course been a decade of recurring epidemics. But the cause of this retrograde movement was to be found in the "fact that since 1818 the lower classes of Edinburgh have undergone a gradual but increasing physical and moral deterioration:"⁽⁴⁾ this assumption was corroborated by the fact that the excess of mortality was confined to the lower classes. Stark associated the commencement of this downward trend with the arrival of the flood of Irish who poured into the town from 1818 onwards, attracted by work on the construction of the Forth-Clyde Junction Canal, and by the building mania which was then at its height. These

people had all the habits which tended to pauperism, and they inhabited the lowest class of buildings, even byres and stables, never before considered habitable.

However, it was the great commercial slump of 1825 which precipitated the trouble by throwing large numbers out of employment, and reducing the wages of all. It was in this year, 1825, that the total annual mortality for the city suddenly rose from 2957 to 3705, and did not afterwards materially fall again. Trade, building and industry had languished in Edinburgh since that date, while destitution, misery and the numbers of the lower classes had increased. This position continued until 1846 when the labour demand of the new railway construction for the first time put the lowest classes in as good a position as they had held in 1824, and in 1846 the mortality rate fell strikingly: but in 1824 the lower classes had formed a smaller proportion of the city's population, and therefore had less influence on the general mortality of the city.⁽⁵⁾ This situation prevailed despite the fact that during this period Edinburgh was spending increasing sums of money on sanitation and street cleansing, upon which about £12,000 was spent annually by 1845: and from the point of view of the upper classes it could be considered one of the healthiest towns in the United Kingdom.⁽⁶⁾

In Glasgow, and indeed in the rest of urban Scotland, at this time the same sort of thing was happening as in Edinburgh. There was the same improvement at the end of the old century and beginning of the new. At that period although the population of Glasgow was expanding rapidly, the city for a short period also expanded, and overcrowding was temporarily held at bay. New suburbs spread to such an extent that in the year 1798, more than half the burials were in graveyards of chapels-at-ease and meeting-houses outside the original parishes of the city. With this expansion, the state of the Public Health may have improved until 1817; it was noted that an increasing number of infants survived their second year, a change which corresponded with the decline in the mortality of smallpox.⁽⁷⁾

However, the improvement was not maintained. Writing in 1827 Dr. MacFarlane, who was one of the surgeons to the poor in Glasgow, remarked on the feeble stamina, sallow complexions and generally miserable condition of the children of the poor: and he noted that smallpox had been more prevalent

during the last three or four years than for a long time previously.⁽⁸⁾

Writing in 1830 Dr. Andrew Buchanan and Dr. Weir showed that the condition of the poor had deteriorated with recent developments in the city. Although the population was still growing fast, the available accommodation had actually been reduced. In some places the poorer classes had been displaced from their former dwellings owing to the building of warehouses and the like, and had been provided with inferior habitations, or none at all. "Apartments originally intended for cellars, and occupied as such until lately, are now inhabited by large families, and the only opening for light and air is the door, which when shut, encloses the poor creatures in a tainted atmosphere, and in total darkness."

The notorious Wynds and many other regions were crowded with a destitute, vagrant and often vicious class of people. "The extreme misery of these poor people is utterly inconceivable but to those who have actually witnessed it..... it has certainly been carried to the very utmost point at which the existence of human beings is capable of being maintained. Some of them are lodged in places where no man of ordinary humanity would put a cow or a horse, and where these animals would not long remain with impunity."⁽⁹⁾ Since 1817 Glasgow had been subjected to recurring slumps with resultant unemployment and poverty for the working classes who made up four-fifths of the city population. By 1840 the state had been reached where it was necessary to class many of the workers on the same level as paupers, and it was said that penury and misery (as well as disease) "culminate in Glasgow to a pitch unparalleled in Great Britain." The poor had become so poor that they could not even pay for their own burials: from 1825-1839 the number of pauper burials steadily increased.⁽¹⁰⁾

The effects of this growing misery were shown in the rising death rates of the city. Between 1825 and 1830 the death rate averaged 1 in 41: whereas in the period 1835 to 1840 it had risen to 1 in 31.⁽¹¹⁾ In Glasgow the male expectation of life at 10 years of age had been 42.27 years in the period 1821-27, but it had fallen to 37.40 years in the period 1832-41. The child mortality was rising as shown by the upward tendency of the combined deaths from smallpox, measles and scarletina.⁽¹²⁾

Writing in 1813 Dr. Robert Watt of Glasgow had remarked on a recent deterioration in standards of infant and child care which he thought was due to the growing numbers of women engaged in industry. He noted also a rise in

the number of still-births; discussing the proportion which they constituted of deaths at all ages he said "The proportion.....has increased from 5.03 to 6.70 or something more than a per cent. and a half on the whole deaths.....One of the most probable (causes) is the introduction of particular manufactures by which immense numbers of women are employed in public works or confined to sedentary employments, by which the general health and vigour of the system must be materially impaired." (13)

FACTORS ADVERSELY AFFECTING PUBLIC HEALTH IN THE EARLY 19TH CENTURY.

The Increase of the Urban Population.

It has already been mentioned that one of the basic factors which at this period were acting adversely on the Public Health was the rapid increase of urban population. This rapid increase is clearly demonstrated by MacDonald. Whereas the average percentage increase in the population of Scotland during each decade of the first half of the 19th century was about $12\frac{1}{2}\%$: in the case of Glasgow the figure was almost 34%; and in the seven next largest towns the average decennial increase was 18%. The proportion of the population of Scotland resident in Glasgow was doubled during this time, and the proportion in the towns with a population of over 10,000 inhabitants increased in almost the same ratio. This increase was largely due to immigration. For example in the 10 principal towns in 1851, only 47% of the inhabitants had been born in them: and these immigrants were said to be mostly of an age at which they were likely still further to increase the population. (14) This increased proportion of town-dwellers meant an increased proportion of the population subjected to more adverse mortality rates than prevailed in the rural areas.

Dr. Stark in 1851 contrasted the death rates of rural and urban populations which prevailed between 1835 and 1845. In 331 rural parishes with a total population of 751,016, during a period of seven years, the average death rate had been 1 in 49.2; whereas in 14 of the chief towns with a total population of 764,297, during a like period, the death rate was 1 in 37.4. (15) Even after making due allowances for the type of statistical material used, the contrast is striking.

The movement of an increasing proportion of the total population to the towns would therefore in itself be a cause of rising overall death rate, and all that that means in terms of ill health. But we have already seen that

from about 1820 the urban death rates were rising. Therefore the increasingly urban population was being subjected to conditions which were actually deteriorating.

Increase of Overcrowding.

There is no doubt that an increase in overcrowding and slum conditions took place in the towns during the first half of the 19th century: The rapid increase of the urban population, largely due to the flood of immigrants who poured into the towns, outpaced the increase in available houses. Whereas in 1801 there were 546 persons to every 100 houses, in 1851 the relative decrease in accommodation was shown by the fact that the number of persons per 100 houses had risen to 780.⁽¹⁶⁾ The population of Glasgow increased by 33,031 between 1831 and 1841, without any significant increase in available houses.⁽¹⁷⁾ The census of 1861 revealed a state of affairs which seems to have caused a good deal of alarm at the time. It showed that 226,723 families, constituting one-third of the total population of Scotland, were living in houses of one room: 7964 of these families lived in single-room houses with no window. The overcrowding in many of these one-room dwellings was frightful. In Edinburgh alone there were 1530 such houses with from 6 to 15 inhabitants each. In many cases the one-room houses were occupied by more than one family. In the small town of Hawick there were 100 of these houses with two or more families.⁽¹⁸⁾

Overcrowding took place within many of the houses. But in addition every available bit of space in the crowded parts of the towns was built over. As the new population crowded in, the rich deserted the old parts of the towns and left them to the new-comers. Gradually the courts and gardens which had provided open spaces in former times were built over, until the tenements were so close packed that there was barely room left for access to their doors. Large areas in Glasgow were so close packed that the neighbours could shake hands, (or fists), across the narrow space between the houses. Dr. J.B. Russell remarked that the development of the old parts of Glasgow over the years observed on maps, was like the study of a progressive geometrical pattern: at first the pattern shows black squares with many white patches marking the open spaces; ^{then} the white slowly fills in until the pattern is almost a solid area of black.

The conditions produced by this development were disastrous, and in the case of the larger towns, especially Glasgow, they seemed to have moved even the most hardened Sanitarians to astonished horror. The sanitary reports written by the reformers of the time are a monotonous repetition of descriptions of grossly overcrowded dwellings and tenement blocks: masses of human beings crammed into small and ill-ventilated closes, whose centre piece was always the communal dunghill. The much quoted report of Symons, one of the Assistant Commissioners of the Handloom Weaver's Inquiry, stated in 1838: "The wynds of Glasgow comprise a fluctuating population of from 15,000 to 30,000 persons. Numberless entrances lead into small square courts, each with a dunghill reeking in the centre..... A very extensive inspection of the lowest districts of other places, both here and on the Continent never presented anything one-half so bad."(19)

Overcrowding seems to have reached its worst in the typical tenement building which was in effect a community the size of a village, with a common stair acting as a vertical street. It was said that: "In Edinburgh what are called 'common stairs' are in fact little streets, carried perpendicularly upwards, and strangers who are taken to admire the picturesque aspect of these lofty structures, have little idea of the misery sheltered under their roofs. In the Middle Meal Market Stairs are 59 rooms, almost all separate dwelling-houses, entered by a steep, dark stone stair common to the whole. In these dwell 248 individuals...divided into 56 families. And in this huge congeries of dens there is no water, no water-closet, no sink. The women living in the fifth or upper floor have to carry all their water up the close and up these stairs. It is not difficult to imagine the state of wet and filth in which they must continually be."(20)

It was of course the rapid increase of population without any sort of housing provision made for it, which caused this overcrowding. However there were certain additional factors which intensified the evil. The people had been bred up in the hard traditions of Scottish life: overcrowding, dirt and squalor were nothing new: to that extent they were perhaps prepared to tolerate worse conditions than a people used to higher standards of comfort and prosperity. If that was true of the Scots of the time, it was even more true of the Irish immigrants. Many observers connected the onset of gross overcrowding with the arrival of the Irish, who in Glasgow for example increased

in numbers from being one to every 9.67 inhabitants in 1819 to one to every 5.69 inhabitants in 1831.⁽²¹⁾

Dr. J.B. Russell stated of overcrowding "I believe it came to us with the Irish, or at least it attained its fullest development with their advent. There can be no doubt that it is the Irish and Scotto-Irish who are at this moment the most obstinate overcrowders. There is very little of it amongst the Lowland Scotch. That worst form of overcrowding - the introduction of lodgers within the family circle is almost confined to the Irish."⁽²²⁾ Long after his coming to office in 1870 as Medical Officer of Health for Glasgow, Russell spent much of his time in propaganda to persuade even the decent and well-doing artisans of that city that money spent on a good house was well spent.

The custom of admitting lodgers seems to have been common. No doubt the shilling per week which was usually charged was a useful addition to small and uneven earnings. Of Coatbridge, for example, it was said to be not uncommon for a family with only two rooms to take in as many as 14 lodgers. One or two lodgers in the single-room house was a commonplace, and the effects of this custom in producing immorality were noted with grave disapproval by the reformers.

Professor W.T. Gairdner, who had been the first Medical Officer for Glasgow, thought that one of the reasons why housing was much worse in Scotland than in England lay in the state of the law. In England the tenement was held to be the house of one individual man who was held responsible. Whereas "In Scotland no one is responsible but the factor..... Our Scotch Common Stair is just simply a mass of chaos and confusion, with no one to keep order."⁽²³⁾

The growth of rack-renting was another factor in producing deterioration. From Aberdeen in 1842 comes the report: "Hitherto the rents were paid twice a year, and were generally paid with great regularity; but of late, in consequence of the frequency of arrears, a practice is creeping in of collecting them in small sums weekly, and a class of landlord, in this way contrive to obtain even a much higher rent than their premises are worth, whilst their risk being less, they are entirely careless as to the character of the individuals they admit as tenants, and being sure of their property being let to some persons or others, refuse all repairs, whilewashing and painting."⁽²⁴⁾

In the old parts of the towns the poor were frequently housed in the former houses of the rich. These were made down into insanitary dens. It was said of Edinburgh that the large rooms of such houses would not pay: "so they are divided by wooden partitions into family apartments a few feet square. These inner cages have no direct communication even with the modicum of light and air which finds its way through the narrow close. The old window of the ancient room is still left, the glass probably all gone; but all the light admitted to the inner dens comes through that window, across a passage and then through a square hole cut in the partition."⁽²⁵⁾ The pernicious effects of the window tax not repealed until 1851, influenced contemporary building

What the effects of such housing conditions were we can only guess. The 1861 census showed that in Edinburgh the death rates varied from 37 per 1000 in the crowded wards of George Square and Lauriston, to 13.7 per 1000 in the residential suburb of Grange.⁽²⁶⁾ In 1885 Dr. J.B. Russell showed that in Glasgow, death rates in houses of different size varied inversely with the number of rooms, the trend being especially marked for death rates from the acute infections. No doubt many factors besides housing were involved in such statistics, nevertheless it is probable that overcrowding added considerably to the deterioration which we are studying.⁽²⁷⁾

The Common Lodging-House.

The influence of dirty and overcrowded houses in the spread of disease was nearly understood, especially in its effects on the new arrivals to the towns. These immigrants were in any case especially susceptible to the diseases of the towns. But they were also especially exposed to them. The country immigrants would find on their arrival that lodging was expensive compared with their rural experience, and naturally tended towards the cheapest and therefore the worst parts of the towns. This tendency was described by Ferriar dealing with circumstances in Manchester at an earlier date: "Great numbers of the labouring poor who are tempted by the prospect of large wages to flock into the principal manufacturing towns, become diseased by getting into dirty infected houses on their arrival. Others waste their small stock of money without procuring employment, and sink under the pressure of want and despair..... The number of such victims sacrificed to the present abuses is incredible." "It must be observed that persons newly arrived from the country

are most liable to suffer from these causes, and as they are often taken ill within a few days after entering an infected house, there arises a double injury to the town, from the loss of their labour, and the expense of supporting them in their illness. A great number of the home patients of the Infirmary are of this description. The horror of these houses cannot easily be described; a lodger fresh from the country often lies down in a bed filled with infection by its last tenant, or from which the corpse of a victim to fever has only been removed a few hours before."(28)

There was one class of houses which was more notorious as a link in this chain of infection than any other, and that was the Common Lodging Houses. These remarkable establishments grew up in large numbers to meet the demands for shelter in the overcrowded towns. They were particularly frequented by the immigrant and vagrant elements of the population and were widely and early recognised by the Medical Profession as distributing centres of pestilence. "The lodging-houses," said Dr. Cowan, of Glasgow, "are the media through which the newly arrived immigrants find their way to the fever hospital; and it is remarkable how many of the inmates of that hospital, coming from lodging-houses, have not been six months in the city."(29)

Dr. Hamilton of Falkirk told the Scottish Poor Law Commission of 1844 "There are a great number of lodging-houses in these parts; these lodging-houses tend in no common manner to foster fever. We have sometimes in these lodging-houses a succession of fever cases in the same bed. One person is seized with the disease, and either dies or removes elsewhere. Another person comes into the same house and bed, - is attacked in the same ^{manner} - and gives way to a successor, who receives the same infection. These lodging-houses are the most fertile sources of fever. I have known them to be the means, through vagrants, of introducing fever from Glasgow and other towns."(30)

Most of these lodging-houses were places of the most wretched sort, being simply houses of the lowest type, crammed full of human beings who were mulcted of the sum usually of 3d. per night for the privilege of this shelter.

In Glasgow in 1841, the lodging-houses were described as centres of poverty, vice and crime, as well as of disease: they were houses of a very wretched description, in low unwholesome situation, exceedingly dirty and ill-ventilated, and frequently crowded to excess, it being no uncommon thing to

find eight, ten and twelve persons in one small apartment of perhaps nine feet by eight feet square. Some of them had no beds, the inmates lying on the floor fully clothed.⁽³¹⁾ In Edinburgh in 1850 one writer attempted to distinguish the various degrees of squalor among lodging-houses. He divided them into four classes. In the lowest class there was no furniture whatsoever: in the next class there was straw: in the third class there were so-called beds, but because of the filth of the bedding these were perhaps the most dangerous of all: there was a rare fourth class, which was organised more ambitiously on the lines of a hotel, but here there might be from four to ten people accommodated in each apartment.⁽³²⁾

The need for some sort of control of Lodging-houses was early recognised, but the efforts at control were tardy and ineffective. In his lectures on Medical Police in 1820 W.P. Alison urged the need for control which Ferriar of Manchester had recommended. "In the accounts which we have of the progress of fever in all large places, we continually find the disease spreading from these lodging houses as from a centre - and they ought to be watched with the same jealousy as receiving ships or military depôts are watched by those who have the care of the general health of the navy and army." Alison thought that they should be licensed by the magistrates in order to get early information of cases of disease which occurred in them. Alison's views on the advisability of limiting the numbers which each lodging-house should be allowed to accommodate give some idea of the difficulties faced by reformers in these times. When there was no system of town government adequate to enforce measures, or to provide alternative accommodation, ill-advised reform might do more harm than good. Alison thought that if such control were instituted, it would simply lead to a spill-over of the surplus population requiring to find shelter into even worse dens unknown to the authorities.⁽³³⁾ Various attempts were made at control, but in the early stages they were more or less ineffective. The Edinburgh Police Act of 1832 gave some powers of control of lodging-houses, but it was ineffective in the absence of an adequate system of Medical Police.⁽³⁴⁾ The Edinburgh and Glasgow Police Acts of 1843 gave such powers, but they too seem to have been little used. The earliest effective measure seems to have been the Calton Police Act of 1840, which gave powers to enforce notification of disease, cleansing, and to prevent overcrowding.⁽³⁵⁾

Industrial Instability and Unemployment.

The economic scene during the first half of the 19th century presents a curious anomaly. The nation's industrial machine grew in power and production, and yet the amount of destitution increased. In seeking an explanation it must be remembered that the so-called Industrial Revolution was not a short and sharp development, with the pangs of birth quickly over: it was a long drawn-out affair, and it can best be considered as a series of changes taking place over almost a century in time. There was constant change during this period: one industry was forced out by another, with resulting upheaval and unemployment until adjustment had been made: adjustment was probably short-lived before the next change took place. The linen industry had scarcely responded to the new mechanical developments before it was driven out by the growing cotton industry, except for a lodging place in Fife and Forfar. After 1830 the coal^{and}/iron industry grew and there was relative decay of the textile industry which ended in disaster for the cotton trade during the American Civil war.⁽³⁶⁾

New methods drove out the old, and this might mean slow starvation for those who continued the old practice, as in the long drawn-out agony of the hand-loom weavers. Moreover, these continued and drastic changes were taking place in a country which had recently emerged from a primitive economy, without time to adjust itself, and with no means of protection for the victims of uncontrolled development. The rich became infinitely richer, the middle classes became stronger and more numerous, but the poor became poorer.

Finance and industry were imperfectly adjusted to demand: and the instability was increased by the deflationary movement following the end of the Napoleonic wars. The result was seen in recurring periods of boom and slump, and the effects of the slumps on the workers were terrible. This was brought out clearly in evidence before the Scottish Poor Law Commissioners of 1844.⁽³⁷⁾ In his review of conditions in Glasgow written in 1841 for the English Poor Law Commissioners, Baird mentions the following slump periods as having been particularly severe in their effects upon the workers in that city, (and they seem to have been so in the other Scottish towns); 1816-17, 1819-20, 1826-27, 1829, 1832 and 1837. He comments "Much, however, as the working classes in Glasgow have suffered from the depressions of fluctuations of trade, the want of employment, and the high prices of provisions, I conceive that their sufferings

from these causes have been trifling indeed when compared to what they have actually suffered from disease, especially of an epidemic nature."⁽³⁸⁾ The pages of Creighton show clearly the close relationship of the great epidemics of these years to the times of unemployment and want.⁽³⁹⁾

This state of affairs continued long after the middle of the century. Every slump and change in industry meant unemployment for thousands, and unemployment meant destitution, and all too often destitution meant fever. This fact was recognised and accepted by many. Lord Cockburn writing at that time asked "Are not millions of starving people the necessary occasional sloughs of a very manufacturing nation?"⁽⁴⁰⁾ In addition there was much seasonal unemployment. W.P. Alison stated in 1840 that "A considerable proportion of the lower orders in Edinburgh, and I believe in every large town of Scotland, are reduced every winter and especially on occasion of the suspension of any considerable works, or of scarcity of provisions...to...(destitution)."⁽⁴¹⁾ It was reported to the English Poor Law Commissioners that in Dumfries many labourers were thrown out of employment every winter.⁽⁴²⁾

Analyses show that wage rates as a whole were not falling at this time. But there were examples of striking falls which caused much distress; for example the rates of the many handloom weavers fell from over 20s. per week in 1814 to 6s. in 1834.⁽⁴³⁾ But the trend of wage rates over a long period gives no picture of the value of 'real' wages during this time. It was the instability of employment and wages which was responsible for the prevailing destitution. What the effects of this destitution were is written in the descriptions of the epidemics of the period.

Some Sidelights upon the Extent of Destitution.

The evidence of the great extent of the prevailing misery and destitution is enormous: it colours the pages of practically every social writer of the first half of the century. It is however worth while to consider briefly certain phenomena of the time which give a sidelight on the subject.

The Growth of Pawnshops. The pawnshops developed and grew in numbers to meet the needs of the workers. Great numbers of the working-classes found themselves from time to time, and at a moment's notice, out of employment and without any means of subsistence. It is scarcely surprising that a demand

should have arisen for some easy means of turning such chattels as they might possess into ready cash: and supply arose to meet this demand in the shape of the pawnshops.

The first pawnshop opened in Scotland in 1806; by 1833 there were fifty-six, and they seem to have multiplied rapidly after that date. The most frequent items pledged were articles of clothing, probably because these were the only possessions on which credit could be raised. In one pawnshop in Glasgow in 1836 it was found that the bed and body clothes were nine times more numerous than all the other articles put together. It was well recognised that pawning often stripped the people of every comfort and the very means of warmth. It was reported in 1865 that "In Edinburgh we have 33 licensed pawnshops, and 219 wee pawns or brokers - 252 in all, gnawing at the very vitals of civilisation, virtue and religion. In the thirty-three licensed pawnshops alone...there are effected annually, and admitted by pawnbrokers in the columns of the Mercury, 1,381,200 pledges, high and low. High pledges and low pledges are a statutory definition of amounts pledged - all below 10s. being a low, all above 10s. a high pledge..... The property that thus goes by the forfeit of low pledges into the pockets of the pawnbrokers must be very large indeed, and explains in fact, how the poor are being steadily dragged by this pawnbroking machinery into the lowest depths of poverty, misery, vice and crime. According to the pawnbrokers' admissions, 12% of these low pledges are forfeited and amount to 165,744 annually." The "wee pawns" came in for special stricture as pests of society, bearing the same relation to the licensed pawnbrokers that the "shebeens" did to the licensed public-houses, and they were all the more dangerous in that they were under no control. Nothing was too small to escape their rapacity, no interest too exorbitant for them to charge.⁽⁴⁴⁾ In addition to increasing the general misery, the pawning of clothing on a vast scale in times of especial destitution was a factor in spreading such diseases as smallpox and typhus.⁽⁴⁵⁾

Extent of Drunkenness. Drunkenness had long been the national vice par excellence. But its evil effects were increasing. It was the increase of whisky drinking among the general population which was recognised as being disastrous. Although it had long been known in the Highlands, whisky was not introduced into the Lowlands until about 1750: in that part of the country, ale had been

the general drink but the consumption of this was reduced by a heavy tax on malt. Already by the time of the Old Statistical Account the use of whisky had become general throughout the country, and its evil effects were recognised by many of the parish ministers writing in the 1790's. By 1840 the consumption had increased enormously, and dram-shops stood at every corner in the growing urban slums. At that date a medical writer from Tranent stated "Nothing is done without whisky. The infant's head, the moment it is born, is washed with whisky: - as soon as it begins to cry, toddy is poured down its throat. At weddings, births, christenings, deaths, and funerals, whisky is present and indispensable."⁽⁴⁶⁾

In 1840 there were forty public houses in the parish of Tranent with a population of 3500; in Musselburgh with a population of 9,000 there were eighty-five houses licensed to sell whisky; in Glasgow and its suburbs there were 2,274 licensed publicans and almost every tenth house was a spirit shop; in St. Andrews with a population of 4,000 there were twenty-four houses licensed to sell whisky, and eleven licensed to sell ale only. For all Scotland at that date the average annual consumption of spirits per head was $2\frac{5}{4}$ gallons.⁽⁴⁷⁾ In Edinburgh in 1850 there were in an area of 1500 sq. yards on the Castle Hill, eighteen spirit shops.⁽⁴⁸⁾

The evil effects of whisky drinking in increasing destitution were generally admitted: and drunkenness succeeded in the rare feat of moving the legislators to reform. The General Assembly of the Church of Scotland appointed a Temperance Committee which reported in 1849. The report was based on 478 returns from different parishes: it noted as causes of the evil the excessive number of public-houses; the common arrangement of paying wages in the bar: the temptations of feeing markets: and the abomination of the bothy system. The Church reformers seem to have been more moved by the extent of drunkenness on the Sabbath than by the other evils.⁽⁴⁹⁾ The best informed comment of the time agreed that it was the sordidness and misery of the working man's lot, which drove him out of his den in the slums to the comforts of the dram-shop. In 1852 a move to reform was started by Edinburgh city magistrates, who began to punish Sunday drunkenness more than weekday offences: publicans began to close down on Sundays voluntarily with beneficial effects. Inspired by this, Parliament in 1853 passed the Forbes-Mackenzie Act which limited the hours of drinking in public houses and stopped Sunday drinking altogether

except for the bona fide traveller. A general improvement in social conditions is said to have followed. But drunkenness was already on the wane. (50)

The Search for Work. (51)

During periods of depression unemployed workers frequently travelled considerable distances in search of work. Sometimes they were encouraged to do this by the authorities of their home parishes who hoped thus to lighten the burden on the poor rates. These men were genuine seekers of work but some of them were forced to beg on their way, and no doubt a few developed into confirmed vagrants. Often the wanderers returned footsore and weary after many weeks of unsuccessful search. A good deal of evidence related to this wandering was presented to the Poor Law Commission of 1844. The Provost of Greenock stated "We found very great exertions made by parties on the relief list to be employed elsewhere; and we had many instances of parties coming and getting a little pecuniary assistance to enable them to go elsewhere. The same parties have come back, after an absence of weeks, and after travelling over a great portion of the country, without succeeding in obtaining work, and quite worn out with their exertions." (52)

The Governor of the House of Refuge in Edinburgh told the Commissioners "I have seen many able-bodied men passing through the night-refuge who have come from Glasgow or Greenock, and have been employed as founders or carpenters, and who have informed me that they have been travelling through England looking for employment, and were just returning back again..... Their feet were bad with travelling; we entertained them for a little time till they got better. We ~~then~~ gave them a little food, to enable them to get on." (53)

In some of the parishes which lay on the main routes between Scotland and England there was a constant procession of these men on the tramp during times of depression. The men moving South in search of work were passed by others coming North from England also looking for employment. The Reverend M. Goldie of Coldstream stated that "Last summer it was quite distressing to see the numbers of artisans and operatives travelling to Glasgow or Newcastle in opposite directions." (54)

Sometimes these parishes were involved in considerable expense in providing these men with beds and caring for them when they were sick. From Annan in Dumfriesshire came the report that "There is a great flock of vagrants

passing and repassing through Annan, between Glasgow and Newcastle; they give them beds in passing, and they generally relieve about 2,000 in the year in that way." (55)

The Chief Magistrate of Selkirk told the Commissioners "There has been a good deal of expense incurred during the past year in consequence of travelling poor and vagrants, and persons 'on the tramp' being taken with illness in the town. Those people pretty uniformly tell the same story; they are generally either going from Glasgow to Carlisle, or from Carlisle to Glasgow." (56)

It was recognised at the time that this large-scale wandering was a serious means of spreading disease. W.P. Alison pointed out to the Poor Law Commission that during the first three months of the epidemic of 1843 in Edinburgh, one sixth of those brought to the Infirmary were wandering strangers "almost all of them in a state of destitution." (57) Dr. Walter Graham of Hawick stated that "The medical men in Hawick have been much oppressed of late by the constant call on them to attend travelling poor in lodging-houses, for which they are not allowed anything. Many of those persons say they come from Ireland, and others say they come from Manchester, Glasgow, and Carlisle, and are passing to and fro between these places. Many of them are in fever, and some have measles, small pox and such-like infectious diseases." Many reports similar to this one were made to the Commission by medical men. (58)

DESTITUTION AND DISEASE

There is a special interest attached to the relation between destitution and disease during the years preceding the Poor Law Amendment Act of 1845. At that time there were epidemics of increasing severity of those diseases particularly associated with misery and want. It was the increasing volume of disease which attracted the attention of the reformers: and with Professor W.P. Alison of the Chair of Medicine of Edinburgh University as the leader, the majority of the reformers in Scotland became convinced that it was increasing destitution which was the main cause of the increase in disease. Accordingly their efforts were directed to obtaining a more adequate Poor Law provision in the country and culminated in the passing of the Act of 1845.

Destitution, disease, and Poor Law Reform are the three links in the chain of Public Health progress at this time. It is clear that the views which eventually prevailed in 1845 were not newly formed. Already in his lectures on Medical Police in 1820 Alison was putting forward the same reasoning

which he later used in a score of pamphlets and articles written during the period of controversy which took place before the Poor Law Amendment Act was passed. Alison had been appointed as a young man in 1815 to be physician to the New Town Dispensary in Edinburgh. This brought him into contact at an early age with relationship between poverty and disease: and he had had an inside view of the deterioration of the health and welfare of the poor in Edinburgh from the start of that retrograde movement. He made a special study of Fevers, and his quarterly reports from the New Town Dispensary, published in the Edinburgh Medical Journal from 1817 to 1819 were important contributions to the knowledge of fevers. In 1820, while Professor of ^{Medical} Jurisprudence at Edinburgh University, he delivered a remarkable series of lectures on Medical Police: from these it is evident that he had already been impressed by the close association between poverty and disease, and had become convinced of the need for reform. His views were confirmed by his experience of the epidemic of Typhus and Relapsing Fever from 1827 to 1828, which he believed to be due to the hard conditions following on the commercial slump of 1825. He worked hard during the Cholera Epidemic of 1831-2, and here again he found the conditions of poverty to be an important causal factor. Between 1832 and 1840 the number of cases of fever was mounting steadily in Edinburgh, and the number of cases of fever admitted to the Royal Infirmary increased greatly. It was these facts which convinced him that some remedy must be sought, and it was his efforts which were mainly responsible for the Reform of the Poor Law.

It is of interest to look at some of Alison's statements on the relationship between destitution and disease. In 1841 he wrote: "We know for example that in Glasgow, in the year 1837, contagious fever caused twenty per cent. of the annual mortality, and in Dundee it caused fifteen per cent.: whereas in no town in England, in any year of the present century has it caused eight per cent. We know that the average mortality in Glasgow, (i.e. in one tenth of the whole population of Scotland) for the whole of five years ending 1840, exceeded by twenty-five per cent. the mortality for the five years ending 1830. We know from the late census, that in the most destitute parts of Glasgow, the population has increased from twenty per cent. to forty per cent., while the number of inhabited houses has not increased at all. We know that, within the last few years (and excluding the year of the visitation of the cholera when it was still higher), the mortality in one year, in

Glasgow, has been as high as one in twenty-four: in Edinburgh, one in twenty-five: and in Dundee, one in twenty-seven - being twenty per cent., and sixteen per cent., and twelve per cent. higher than that of London, or Manchester, and still higher above that of Leeds and Birmingham in the present century - and we know that for this crowding, this extension of epidemic disease, and this mortality, in the judgement of the most experienced observers 'the most influential of all causes is Poverty and Destitution.'"⁽⁵⁹⁾ Alison later quoted a remark made to him by Dr. Cowan "Turn which way we will, in seeking for the causes of these epidemics of fever, Destitution stares us in the face - the main cause of all."⁽⁶⁰⁾

The close connection between these fevers and poverty is borne out by a study of the years in which the great epidemics occurred. There were no such epidemics in the early years of the century, despite the fact that neglect of sanitation and so on were as flagrant then as in later times. The first great epidemic of the century, from 1816-18, coincided with the depression which followed the end of the prosperous war years. The epidemic of 1827-8 followed on the commercial crash and depression which began in 1825. In 1836 a period of industrial depression began, and the epidemic of 1837-9 followed in due course. The epidemics of 1842-4, and 1847 also coincided with periods of depression and unemployment. In 1847 there was also a serious harvest failure which brought famine in parts of the country.⁽⁶¹⁾ The effects of destitution are also strikingly illustrated by the behaviour of Relapsing Fever during these years. Relapsing Fever epidemics are notoriously associated with poverty and squalor. That disease appeared in epidemic form in 1816-17, 1827-8, and 1837-8; in the years 1842-4 it affected vast numbers, and it was prevalent in 1847-8. Yet in these years in England Relapsing Fever either did not appear at all or its ravages were much less extensive.⁽⁶²⁾

It is worth while to consider the increase in disease which was responsible for these developments, and to study some of the efforts which were made to check the progress of the epidemics, before passing on to consider the actual reforms for which Alison and his friends had fought.

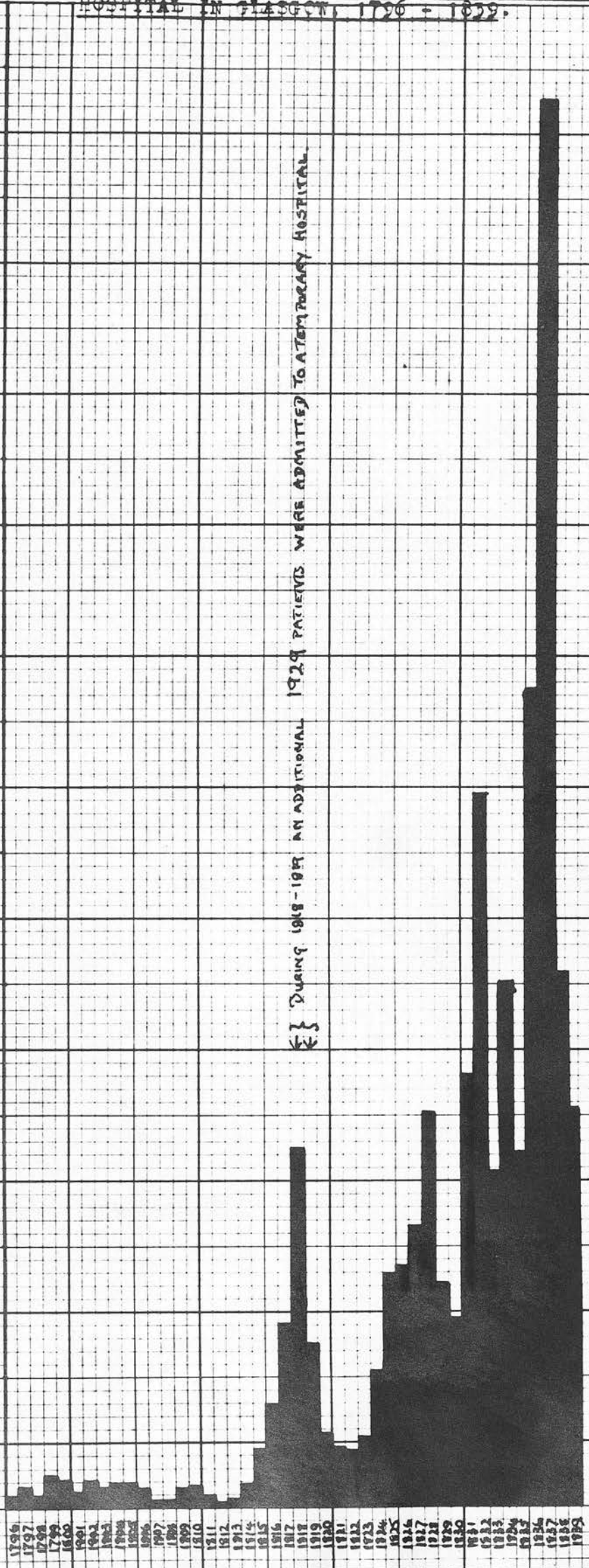
The Increase of Contagious Fevers.

In this text typhus and relapsing fever are meant by the description Fevers. The trends in these diseases are particularly studied because of their especial connection with the condition of destitution, and also because it was

NUMBER OF FEVER CASES ADMITTED ANNUALLY TO HOSPITAL IN FLAGSTON, 1796 - 1929.

ANNUAL No. OF FEVER CASES ADMITTED TO HOSPITAL.

5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500



During 1918-1919 an additional 1929 patients were admitted to a temporary hospital.

their increase which excited particular alarm at the time. This increase is most clearly shown by detailing the actual numbers of fever cases admitted annually to hospital in the two largest towns, Glasgow and Edinburgh. These numbers are shown both in table and graph form. This method is of course open to criticism on the grounds that the numbers admitted to hospital may reflect the policy in regard to hospital admission, and the available hospital accommodation in any one year, rather than the actual number of fever cases: nevertheless it is believed that these numbers of hospital admissions do reflect the trends. It must also be noted that at the same time as the numbers of fever admissions were increasing, so too were the populations which were involved increasing; but taken in conjunction with rising death rates in which fever played a considerable part, it can be considered that the increase in hospital admissions was excessive.

TABLE IX

Number of Fever Cases in Glasgow Admitted Annually to Hospital (63)

Year	Number of Admissions	Year	Number of Admissions	Year	Number of Admissions	Year	Number of Admissions
1796	43	1807	25	1818 ⁽⁶⁾	1371	1829	865
1797	83	1808	27	1819 ⁽⁶⁾	630	1830	729
1798	45	1809	76	1820	289	1831	1657
1799	128	1810	82	1821	234	1832	2734
1800	104	1811	45	1822	229	1833	1288
1801	63	1812	16	1823	269	1834	2003
1802	104	1813	35	1824	523	1835	1359
1803	85	1814	90	1825	897	1836	3125
1804	97	1815	230	1826	926	1837	5387
1805	99	1816	399	1827	1084 [*]	1838	2047
1806	75	1817	714	1828	1511	1839	1529

(6) During the period 1818-19 an additional 1929 patients were admitted to a temporary hospital at Spring Gardens.

TABLE X
Number of Fever Cases Admitted to Glasgow Royal Infirmary (64)
As a Percentage of all Patients Admitted 1795-1839.

1795-1809	..	..	..	10.9%
1810-1824	..	..	..	23.27%
1825-1839	..	..	..	50.01%

TABLE XI
Annual Admissions to Hospital of Fever Cases in Edinburgh (65)
for Certain Years in the Period 1817-40

Year	Admissions	Year	Admissions	Year	Admissions
1817	511	1825	341	1833	878
1818	1572	1826	456	1834	690
1819	1027	1827	1875	1835	826
1820	....	1828	2013	1836	652
1821	....	1829	771	1837	1224
1822	....	1830	346	1838	2244
1823	....	1831	758	1839	1235
1824	177	1832	1394	1840	782

The upward trend of fever admissions was continued after 1839 as is shown by the fever admissions to Glasgow Royal Infirmary between 1846 and 1849.

TABLE XII
Annual Fever Admissions:
Glasgow Royal Infirmary 1846-1849 (66)

1846	..	..	..	1270
1847	..	..	..	4732
1848	..	..	..	1493
1849	..	..	..	510

A detail of monthly admissions to the Royal Infirmary for certain years between 1836 and 1848 shows the same sort of trend for Edinburgh.

TABLE XIII
Average Monthly Admissions to Edinburgh Royal Infirmary
for Certain Years between 1836 and 1848

1836-39	..	..	..	134
1843-44	..	..	..	380
1847-48	..	..	..	420

The excessive incidence of these Fevers in Scotland at this time is illustrated by an observation of Dr. Stark. He noted that on the Continent the arrival of a cholera epidemic was generally observed to double the annual mortality. Whereas Scotland, although sharply handled by cholera in the year 1848, showed a lower mortality in that year, than in 1847 which was a year of typhus epidemic. Thus in Edinburgh although cholera prevailed in 1848 and 1849, the mortality of 1847 exceeded that of 1848 by 1231 deaths, and it exceeded that of 1849 by 1899 deaths. (67)

THE HOSPITAL PROVISION FOR FEVERS

It would be impossible to form any idea of the attitude of the period to the problems of Public Health, without studying the methods which were adopted to stem this onslaught of epidemic fevers. Although there were many medical men and others who saw the need for new and drastic measures, the dangers of the situation were not faced by the town communities. The main work of dealing with the fevers was left to those Hospitals which had been set up in the previous century: and it was only when a particularly severe epidemic threatened to overwhelm the entire life of the town that the public authorities were stirred to action, and then the action was short-lived and ceased when the immediate danger passed. Although the need for a more constant supervision was frequently urged, the imperfectly organised community was not yet prepared to see where its needs and responsibilities lay.

This attitude was clearly described by Dr. J.B. Russell who won his spurs in the struggle to establish Municipal Fever Hospitals. Describing the earlier times which we are considering, he wrote of Glasgow: "Each epidemic was a tragedy. When it was played out all the properties were dispersed and the stage left unfurnished.... From its opening in 1794 for seventy years the Royal Infirmary was the centre of every provision for isolation. At one time indeed the managers even disinfected the houses from which they removed fever patients. The usual course of events was the rapid extension of the epidemic until the Infirmary Fever House was overflowing: then public excitement, public meetings, the appointment of a 'Fever Committee', or a 'Board of Health,' as in 1832 and 1837, the collection of funds, a rushing about for sites for temporary hospitals, attendance at home, the organisation of a staff of fumigators, etc. Then the disease in due time began to decline: it shrank within

the capacity of the Royal Infirmary: the hospitals were pulled down, the doctors, nurses and fumigators who had not been buried were paid off; a report of the receipts and disbursements was submitted and the Board or Committee ceased to be. The play was over; the old properties were not even stowed away, they were burned."

The system of hospital treatment in Glasgow had been wrong in every respect. Each wave of epidemic was met by expedients extemporised in the midst of its onset. The money expended was drawn from the public purse by different channels, whether in the form of Police or Parochial Assessment, or of voluntary contributions to the funds of the Royal Infirmary. Large sums were spent on perishable erections, and on their administration. The immediate crisis having passed those temporary hospitals were dismantled, leaving the City with nothing to represent the past outlay. Not only so, but valuable time was lost in hesitation, tampering with a disease which might have been 'stamped out' or greatly mitigated if it had been grappled with at once. "We may arrive at a first estimate of such a method of dealing with fever by supposing the same principles to be applied to the City Fire Brigade. If, during a few months, no fire had broken out, and, urged by a popular cry of economy, our civic rulers sold their fire-engines and disbanded their staff of firemen, then half the City might be burned before the fire-engines could be reconstructed and the brigade reconstituted. Just so is it with our provision for the treatment of fever."⁽⁶⁸⁾

The Glasgow Royal Infirmary was opened in 1794 with 150 beds. In 1816 80 beds were added. In 1818 when the first great typhus epidemic was at its height, the proportion of cases of fever admitted exceeded 60%. To meet the strain on accommodation, ~~on~~ a temporary hospital with 200 beds was erected by public subscription at Spring Gardens; it was opened in March 1818 and closed in July 1819. In the period of sixteen months approximately 2,000 fever cases were treated in that temporary hospital. It was again brought into use during the epidemic of 1827 and was kept open for five months at the expense of the Infirmary. In 1828 a temporary booth was erected in the Infirmary grounds capable of taking 68 patients. In the previous year the Directors of the Royal Infirmary decided to open a permanent Fever House because, they stated, "In this large city typhus fever must be at all times liable to occur, and in the narrow and crowded vennels and wynds it must be frequently apt to break out with

virulence so as to endanger the whole town." The Fever House was opened in 1832 with accommodation of 200 beds. In the meantime the typhus epidemic and the threat of cholera had forced the magistrates in 1831 to set up a Board of Health. This body secured and fitted up a disused cotton mill at Mile-End with 135 fever beds, and the Infirmary directors erected a shed in their grounds with 60 fever beds. Altogether a total of 236 beds in five hospitals were made available for cholera cases. All this extra accommodation was strained to the utmost in 1832.

In the typhus epidemic of 1837 the city again went through the same motions. The Fever House overflowed, a Board of Health was constituted and a temporary overflow hospital was erected. Ten years later in the typhus epidemic of 1847 the process was repeated. This epidemic was so severe that all the accommodation, permanent and temporary, which the Infirmary Managers were able to provide proved inadequate. The Parochial Boards of both the City and the Barony parishes opened temporary hospitals: - one secured the old Tron Hospital, and the other erected sheds. Between them nearly 900 beds were provided. In all in 1847, 1254 fever beds were available, and 11,425 cases received public treatment. In that epidemic it was reckoned that one in eight of the city's population was stricken, or 43,000 persons: the death rate from typhus alone was 1 in 75 living. In the cholera epidemic of 1848 the Infirmary fever sheds had again to be opened, and the parishes were compelled to resume their hospital treatment. The cholera epidemic of 1854 necessitated a similar process.⁽⁶⁹⁾

The work of the Parochial Boards in 1847 and after in providing fever beds has been noted. The beds were temporary, but this provision by public bodies was at least an advance. The Parochial Boards were forced into this work by the terms of their duties under the Poor Law Amendment Act of 1845: and this might be said to mark the first effort in the direction of the provision of fever beds by a public body under statutory requirements. In 1865 the Glasgow Town Council at last made provision for a permanent municipal Fever Hospital. But even at that late date the acceptance of fever patients was still subject to many qualifications, and it was not until 1881 that the municipality accepted full responsibility for all fever cases occurring in the City.⁽⁷⁰⁾

The system of providing for fever cases in Edinburgh placed even more reliance on the Infirmary of that town: but other provision was made from time to

time. Alison, in his lectures on Medical Police in 1820, described the provisions which had been established during the epidemic of 1817. It is an interesting commentary on the ideas of the time to observe that he outlined these as a model for his students to note. It is true that he insisted on the need for a permanent organisation to be kept in being to deal with fever epidemics as soon as they arose: but Alison, although in advance of his time in social ideas, did not visualise this organisation as a duty of the civic authorities. He discussed the importance of getting all cases into hospital, and the methods of overcoming the general reluctance to go into hospital, this reluctance being often due to the fact that the infected wage-earner knew that he left his family destitute. "It has generally been found sufficient to defray the expenses of the removal - (to hospital) - to furnish a recommendation to the Hospital and to make a regular weekly allowance to the family of the Patient during his illness."

In addition to the Royal Infirmary, Queensbury House had recently been opened as a temporary Fever Hospital. "Since the opening of Queensbury House for the reception of fever Patients, no instance has occurred of a Patient being refused admittance for want of room - or of delay in his removal. A Fever Committee has been established, and this Committee has an officer always at the Infirmary who receives the recommendation of the admissions of the fever Patients - the removal and the burial if the case terminates fatally, take place at the expense of the Committee. The support of the family of the Patient is undertaken by the Destitute Sick Society. In consequence of these regulations twenty-four hours never elapse between the time when intelligence is received of a person being ill of fever, and that of his removal to the Infirmary or Fever Hospital. It is of great importance both as to the prevention of the spreading of the disease, and as to the cure in any particular case that the removal to an hospital should take place as early as possible.... Persons are employed by the Committee - on the recommendation of a medical man - to fumigate the rooms with oxymuriatic acid gas, and (what is of more importance) to thoroughly wash the bed furniture, to scour other articles of furniture, to whitewash the walls of the house, and to ventilate the place completely; and sometimes, where there is much poverty, a bed or two are lent for the time to the Family by the Destitute Sick Society..... The Destitute Sick Society, for their own benevolent

purposes, have divided the city into districts and each district is visited weekly by two of their body, in order that the medical man belonging to that district (there being one appointed to each) may know at once of any case of the disease there existing.....I say that even in large towns there is no necessity that the establishment for the reception of fever patients should be permanent: thus two wards of the Royal Infirmary were found sufficient for the accommodation of such patients, for many years - and when the fever is more prevalent than usual, it is easy to provide some additional temporary establishment. It is quite necessary, however, that the Society or Association with which the management of the preventive measures rests, should be permanent - and one or two officers should always be employed in its service; and then, if the disease should become prevalent, it will be easy to obtain more subscriptions, and to take more persons into employment. But if the whole thing has to be started from the beginning each time much valuable time will be lost."⁽⁷¹⁾

If Alison had lectured in 1840 on the same subject perhaps the experience of twenty years of almost constant epidemics might have made him amend his views on the adequacy of temporary accommodation. Nevertheless this was a remarkable exposition of the needs of the time, and an interesting adaptation of the only sort of public health machinery then known. Alison was by no means exceptional in his views among the medical men of his time. There were many medical pamphlets written during this period urging the need for increased provision for fever cases. In a letter of advice to the authorities in Aberdeen a certain Dr. Miller of Glasgow wrote in 1818: "It is only by a universal sweep, or nearly universal sweep, of the sick into Fever Hospitals, joined to a universal, or nearly universal purification of their dwellings, that anything is to be hoped for in the way of suppressing of our epidemic. So far as this grand object is concerned all the rest is folly. It is worse than folly."⁽⁷²⁾ But it was to be another fifty years before these reforms were even attempted.

There were considerable dangers in the policy of relying so exclusively upon the Infirmarys. Insufficient hospital accommodation might result in overcrowding of wards, with disastrous results. Thus in the epidemic of 1847-8, overcrowding of wards in Edinburgh and Glasgow led to spread of the infection, especially among the nurses and attendants. Moreover centralisation on these great hospitals meant that the sick had to come from long distances, with resulting spread of infection and also deterioration in the condition of

the sick travellers. A further disadvantage lay in the fact that the interest of these hospitals lay in curing the patient rather than the protection of the community, and cases might be discharged while still infectious - this disadvantage would lie rather in the case of smallpox than of typhus. There was difficulty in overcoming the prejudice of the people against coming into hospital. There were long distances to be travelled: but also there was distrust of the nursing. Too often the nurses were drunken slatterns. (73)

Whatever the reasons epidemics were increasing in severity. Rightly or wrongly the next attack was directed not immediately against Fevers, but against the increasing destitution which was deemed to be the cause of the deterioration in the condition of the people.

DESTITUTION AND THE REFORM OF THE POOR LAW.

The Poor Law Before Reform. (74)

Poor Relief in Scotland as it was before 1845 had grown up to meet the simple needs of a community organised on primitive lines. It was later said that "Outside the principal centres of population the old Scottish Poor Law may best be described as a regulated and legalised scheme of begging, supplemented by voluntary assessments and the charities of the Church." (75) By 1845 the community had long outgrown the stage where its poverty could be dealt with by such a system of licensed begging and Church alms. The Poor Law was overdue for reform.

The Poor Law of Scotland was based upon a Statute passed in 1579. This Act had regulated the relief of the poor for a century and a half, with only minor changes: and in many ways the provisions of the Act which amended the Poor Law in 1845 were only a development of its methods. Previous to 1579 a series of Acts had been passed concerned with suppressing beggars. Lurid punishments were to be meted out to able-bodied beggars variously described as sorners, overlyers, strang and maisterful beggars, fools and bards and such-like runners about. The Statute of 1579 was itself "For the punishment of strong and idle beggars, and relief of the poor and impotent." But it gave powers for the first time whereby the poor could be provided for out of public funds. It gave to the Provost and Bailies in the Burghs, and to the 'Justice' in landward parishes, the duty of making a yearly poor's roll of the deserving poor who were defined as the young under fourteen and the aged over seventy, and poor, impotent,

and decayed persons. It was a duty to provide for these their needful sustentation.

Certain well-marked features of the Scottish Poor Law date from this Act. There was no provision for the able-bodied poor such as had been made in England. The Statute was as stringent as its predecessors against the strong and masterful beggars. Able-bodied persons without means of support were to be apprehended and punished. Power was given to stent (assess) and tax the inhabitants of the parish to provide for the impotent poor, but this power was discretionary. For long the Scots showed a marked reluctance to stent or be stented: therefore the Poor Law had to find its funds by other and less certain methods. Begging was recognised under a system of licences: parishes had their system of granting licences to beg within the parish boundaries.⁽⁷⁶⁾

Like much well-intentioned legislation of the Scots Parliament, the Act of 1579 tended to become a dead letter. Therefore Parliament and Privy Council during the 17th century gradually adapted its provisions to a form in which they could be made effective by the institutions of the time. The Church was ascendant, and Scotland had become almost a theocracy: so the administration of the Poor Law was put into the hands of the Kirk Session and the heritors or landowners in landward parishes, and of the magistrates in burghal parishes. Assessment of parishioners was still a discretionary method of providing for the poor, but was almost never used. The church collections and certain other church revenues were recognised legally as the Poor's Fund for distribution: and in addition regular paupers were licensed to beg. Thus Poor Relief depended upon the charity of the people, who might give alms direct to the supplicant or leave money at the church door. In this form the Poor Law remained until 1845, but it proved increasingly inadequate to deal with the needs of Scotland as the country developed during the Industrial Revolution.⁽⁷⁷⁾

The population of the country was growing, but the proportion of the people who were members of the Established Church diminished. It was they who contributed to the church collections upon which the poor depended. So each secession from the Old Kirk made the voluntary basis of the Poor Law less stable, and the Disruption of 1843 was the final blow. The number of Episcopalians was increasing especially among the wealthy; and after the influx of the Irish many of the poorest of the people were Catholics. It was felt to be wrong that

the faithful of the Established Church should have to maintain the poor of other sects. In the country districts, an increasing number of the richer heritors were absentees, and there were complaints that their failure to contribute to the Poor's Fund threw a greater burden upon those who remained. Moreover as the difficulties in providing the Poor's Fund grew, the demands upon it were increasing, especially in the towns.

The feeling against assessment remained strong, partly because it was thought that a poor rate lowered self-respect and made pauperism attractive, but partly because of the parsimony of a poor and thrifty people. Nevertheless the number of assessed parishes slowly grew. The total number of parishes was about 870.

In 1700 there were	3 assessed parishes.
In 1740 there were	8 assessed parishes.
In 1818 there were	145 assessed parishes.
In 1845 there were	230 assessed parishes.

The larger burghs were early in the movement to assess, for they found it impossible to maintain their poor by church collections alone. Pauperism in the towns was increasing. Uncontrolled industrialism created many casualties: every epidemic left its legacy of widows and orphans with a claim to support. There was a drift from the rural areas of the old and infirm who had become unfit for agricultural work, seeking employment in the towns. Every depression produced an army of able-bodied unemployed for whose terrible poverty the Poor Law made no provision. Despite opposition the number of towns which were assessed grew and the sums raised by assessment increased. Thus the Poor's Fund raised by assessment in Dundee rose from £400 in 1791 to about £2,000 in 1832, and £4,000 in 1845. In Glasgow in 1784 assessment yielded £1,082; this had increased to £12,387 in 1816, and to more than £17,000 in 1830.⁽⁷⁸⁾ By 1839 almost every town of importance was assessed; in that year although there were only 230 assessed parishes out of a total of 870, the former represented a population of 1,178,280 persons against 1,137,646 in the unassessed parishes: and although the populations of the two groups were almost equal, the funds raised for Poor Relief in the assessed parishes was £91,000, against £48,000 in the unassessed group.⁽⁷⁹⁾ The existence of a more certain system of Poor Relief in the towns acted as another source of attraction to potential paupers from unassessed rural parishes: so every increase in assessment appeared to increase the problem which it was intended to solve. There was need for

uniformity in administration, and a more even distribution of the burden.

Even in the assessed parishes the sum available for Poor Relief was quite inadequate, with the exception of parishes in the counties of Berwick and Roxburgh which had long been assessed and were influenced in their provision by their closeness to the English Border.⁽⁸⁰⁾ In 1838 in England the funds available were six times greater than in Scotland in proportion to the population: the expenditure being 7s.7d. per head of the population in England, against 1s.4d. per head in Scotland. In the unassessed parishes the Kirk Sessions were hard put to it to provide the merest pittance for their poor. In the early 19th century the English and Scottish Poor Law problems were opposite. In England the problem was to curb excessive relief to able-bodied paupers. In Scotland the able-bodied were not eligible for relief: the aged and impotent poor often did not get the relief to which they were legally entitled, and relief when provided was usually insufficient.

The Poor Law Reform Movement.

The increasing volume of epidemic disease during the early years of the 19th century concentrated attention upon destitution as a leading cause of trouble. The antiquated Poor Law was an obvious scapegoat: and so a prolonged agitation went on for Poor Law Reform which culminated in the passing of the Act of 1845. The controversy over Poor Law Reform is of interest in itself, for it played an important part in educating public opinion in Scotland concerning the state of the poor, and of the working classes generally.

The chief protagonists in the debate for and against Reform were two Professors of Edinburgh University: W.P. Alison of the Chair of Medicine, and Thomas Chalmers who was at that time Professor of Divinity. Chalmers, although he was an ardent social reformer, was a bitter opponent of compulsory legal assessment to provide for the poor. He argued that poor relief was no solution to the problem of poverty. Thus, "If you wish to combat poverty, combat it in its first elements, if you confine your beneficence to the relief of actual poverty you do nothing. Dry up if possible the springs of poverty, for every attempt to intercept the running stream has failed."⁽⁸¹⁾ He urged that by withholding legal assistance you ensure better wages, teach habits of providence, strengthen mutual affection and give independence of character. Chalmers had watched with horror the growth of the pauperism of able-bodied workers under

the unreformed English Poor Law, which he regarded as a creator of the evil it set out to treat, a corrupter of character, and a cause of class hatred. Nevertheless he believed in the necessity for taxation to provide care for the sick, and to provide education for all. Chalmers spoke with the authority of a man who had carried out a great experiment in the pastoral supervision of the poor in the slums of Glasgow,⁽⁸²⁾ but this scheme did not survive for long after he had ceased to supervise it. When he led out the Free Church at the Disruption in 1843, Chalmers finally ruined his own case.

Alison's reputation as a physician, and his experience in the treatment of fevers among the poor in Edinburgh gave him an attentive public. He had seen for a long time the influence of destitution in the causation of disease. In 1840 he came to the front of the Poor Law Reform movement with the publication of his pamphlet: "Observations on the Management of the Poor in Scotland and its effects on the Health of the Great Towns," which had considerable influence on opinion. In it he asserted that legal assessment for the relief of the poor was not an evil but an absolute necessity for every highly civilised country: that it relieved the pressure of population on the means of subsistence by raising the standard of comfort among the destitute classes and improving their habits; and he showed that, despite errors of administration, the English Poor Law had permanently improved the position of the destitute classes in that country, and had helped to abolish beggary. He also showed clearly that destitution was greater in Scotland than in other European countries, and that its increase was responsible for the increase of epidemic disease. Alison believed that the situation was not merely bad, it was deteriorating: yet the only measures which could effectively check this process were withheld. Thus in Edinburgh: "While there has been much disposition to relieve the sick poor, there has been very general discouragement of institutions for the relief of mere poverty, - of the unemployed poor, the aged or permanently disabled poor, and the widows and orphans of the poor. The whole sum applied to these purposes is much smaller than in all the English towns. The kind of assistance to the poor, which all medical men know to be of the utmost importance for the prevention of many of their most formidable diseases has been as much as possible withheld."⁽⁸³⁾

An adequate system of Poor Relief such as was provided in England was a first necessity in preventing disease and lowering mortality rates. It was

largely due to Alison's work that in 1840 there was formed in Edinburgh 'An Association for obtaining an official Inquiry into the Pauperism of Scotland,' and this association obtained the appointment of the Royal Commission of 1843 whose recommendations led to the passing of the Poor Law Amendment Act in 1845.

The Royal Commission on the Poor Laws of Scotland, 1844: Inadequate Provision for the Sick Poor.

The Royal Commission condemned the existing arrangements on two main counts: The insufficiency and uncertainty of much of the Poor Relief and the lack of provision for the sick poor in many parts of the country. Relief varied from a shilling or two per week in the assessed areas - and on this a widow with a large family might have to survive - down to a few pence per week in some of the rural areas. The wonder was, in many cases, that the paupers had continued to survive on the miserable pittance allowed them. (84)

On the question of the sick poor the Commission stated that "There is scarcely any provision made for medical relief to the poor out of the poor funds in Scotland. This seems to be left systematically to private charity." (85) Much of their evidence went to show that if the poor ever saw a medical man, it was due to the benevolence of the Doctor who frequently had to pay for any drugs which were necessary out of his own pocket. In Edinburgh, Glasgow and a few of the larger burghs, Infirmaries and Dispensaries to some extent supplied the lack of any parochial provision. Otherwise the poor were left dependent on the charity of medical men, both for medicines and attendance. (86)

Excellent work though they had done the Dispensaries as they were organised in some places were not sufficient. W.P. Alison who had had long experience of Dispensary work in Edinburgh had summed up the situation regarding medical relief in Edinburgh in his evidence before the Poor Law Commission: "The medical aid to the poor I believe to be generally very deficient; and where it is sufficient for them, it is a heavy and unjust burden on the medical men, who devote often, I believe, a larger portion of their time and money to the service of the poor than any other class in the community. I remember a very excellent man, a practitioner in the Grassmarket here, who told me that he had sometimes given away in a day, among the poor in the Grassmarket, more than he had earned on that day. In most towns there are dispensaries, by which medical men are relieved of great part of the expense of medicines for the sick poor, and in

some of them, I believe, the duty of visiting the sick poor is very carefully performed; but being always on the voluntary principle, there is no security for its being regularly or uniformly performed, - for the persons employed to visit being regularly instructed, - or for that early attention to cases, on which the success of treatment, in most cases admitting of successful treatment, depends. For example, in Edinburgh, for thirty years before 1815 there was a public dispensary; but it was opened only twice a week, and it was no part of the duty of the medical officers to attend the sick poor at home. Any other medical aid which the sick poor had at home was private charity on the part of the medical men. Since then the duty of attending the sick poor at home has been undertaken by several dispensaries; but the assistance given in this way is not so regular nor effectual as it ought to be. During the present epidemic, many of the young men, students, on whom the duty of visiting chiefly devolves, have been deterred from attending the dispensaries by the fear of having their studies interrupted by attacks of fever. I saw a man lately, the father of a family, just dead of this yellow fever; his widow assured me that she had sent ten times to different dispensaries for advice during his illness, and had received none. In the Canongate, the dispensary aid to the sick poor came to an abrupt close in the middle of the epidemic, in consequence of the death (by fever) of Dr. Finch, one of the medical officers, who had served as treasurer to the Institution. In order to have the dispensary relief made effectual and regular, it would be necessary to have the town divided into districts, each dispensary taking charge of a limited district, and each medical officer of a portion of that district. He would then go through the business regularly, would know the people of the district, and acquire their confidence; and having one or two assistants, could do the duty without interfering materially with profitable avocations. Such a division of the town has often been proposed, but always met by the objection, on the part of each dispensary, that, if they were to limit themselves to districts, their subscribers would be equally limited; and that they must shew themselves in all parts of the town, to keep up their subscriptions. This illustrates the evil of leaving an object of such importance to the voluntary system of charity. Further, by the zeal of individual medical men, more dispensaries have been founded than would have been required, if there had been a fair division of the town; and the money expended at them,

besides being levied from a small portion of the public, is partly wasted in maintaining unnecessary establishments. I have no doubt that the system of medical relief to the poor by medical officers, appointed and paid by the managers or guardians of the poor in each district, and responsible to them - allowed also some remuneration by students advanced in their studies, and acting as their assistants, might easily be made much better for the interests of the poor, and more uniformly efficient, as a means of medical instruction, than the system of voluntary relief from dispensaries, such as exist here. There can be no doubt, that, by a well regulated system of medical relief, particularly adapted for the early stage of inflammatory complaints, to which the poor are liable, and by judicious measures of medical police, many of the working-classes, who are now reduced to pauperism by disease, by premature old age, or by the death of relations, might be enabled to maintain themselves in independence."⁽⁸⁷⁾

The Poor Law Amendment Act 1845.

The Act of 1845 for the "Amendment and Better Administration of the Poor Laws in Scotland" was by no means as radical as the English Act of 1834. It was a very cautious development of the previous law on the subject, and it maintained most of the characteristics of the Scottish system. The Parish was to remain as the unit of administration. Parochial Boards were to be established consisting of the Kirk Session and heritors with elected representatives of the rate-payers in the assessed parishes. In the Burghs there were to be elected representatives with the chief magistrates as ex officio members. A central Board of General Supervision was established, but its powers were limited to supervision and investigation of the work of the Parochial Boards, with the right to remonstrate, and to report to the Secretary of State. It is noteworthy that it was still left to the Parochial Board to decide whether or not assessment was necessary to maintain the Poor's Fund. Moreover relief was still limited to the aged and infirm poor: the Poor Law Commissioners having recommended that it "was neither necessary nor expedient" to give funds raised by assessment to the able-bodied poor in times of depression.⁽⁸⁸⁾ The system of

⁽⁸⁸⁾ The Commissioners had listened to a mass of evidence which described the destitution to which the able-bodied poor were reduced in times of depression, and its effects. (See W.P. Alison - Remarks on the Report of Her Majesty's Commissioners on the Poor-Laws of Scotland. Edinburgh 1844, pp.25-55)

out-door relief was to be maintained where possible: and although the provision of Poorhouses by parishes over a certain size, or by unions of parishes, was recommended, it was not made compulsory.

Altogether no great change could be expected in the social scene from a measure of this kind. None the less it did make clear the duty of the parish to provide relief. The Parochial Board had to appoint an Inspector of Poor, and to him was entrusted the direct control of relief, subject to the Board. He was criminally liable for the death of any person whose application for relief had been refused; and his tenure of office was secured against local pressures for he could be dismissed only by the Board of Supervision. An applicant who had been refused relief could appeal to the Sheriff: and if relief offered was inadequate the applicant could appeal to the Board of Supervision⁽⁸⁸⁾. Therefore although assessment had not been made compulsory, it became almost a necessity if the other conditions of the Act were to be carried out. The number of assessed parishes increased rapidly. Thus:-

In 1845	there were	230	assessed	parishes		
In 1846	"	"	420	"	"	"
In 1894	"	"	840	"	"	"
In 1909	"	"	870	"	"	"

On the debit side must be set the fact that the Act resulted in some deliberate displacement of population. To avoid increasing poor rates, the heritors in certain parishes pulled down cottages lest they become the lodging-place of paupers.⁽⁸⁹⁾

The medical provisions of the Act are perhaps the most interesting part of it, for it created a statutory obligation to provide for the sick poor. Thus Section 66 of the Act laid down that "In all cases in which poor-houses shall be erected or enlarged, or altered, under the provisions of this Act, there shall be proper and sufficient arrangements made for dispensing and supplying medicines to the sick poor.....and there shall be provided by the Parochial Board proper medical attendance for the inmates of every such poorhouse, and for that purpose it shall be lawful for the Parochial Board to nominate and appoint a properly qualified medical man, who shall give regular attendance at such poor-house, and to fix a reasonable remuneration to be paid to him..." Section 67 stated that "It shall be lawful for the Parochial Board of any parish or combination, for the benefit of the poor of such parish or combination, to contribute annually or otherwise such sums of money as to them may seem reasonable and expedient from

the funds raised for the relief of the poor to any public infirmary, dispensary or lying-in hospital, or to any lunatic asylum, or asylum for the blind, deaf or dumb..." Section 69 said that "In every Parish or combination.....the Parochial Board...are required out of the funds raised for the relief of the poor to provide for medicines, medical attendance, nutritious diet, cordials and clothing, for such poor, in such manner, and to such extent as may seem equitable and expedient."

Thus for the first time a class in the community was established for whose sickness statutory provision had to be made, and a duty was laid upon newly created Statutory Bodies to arrange this provision out of public funds. We have already noticed how these new powers were made use of in Glasgow to set up accommodation for fever cases during epidemics from 1847 onwards.

The Board of Supervision seems to have worked from the start to make the medical service for the sick poor as efficient as possible. In its rules for Inspectors of Poor issued in 1845 the Board ordered that "In all cases of sickness or accident befalling persons entitled to parochial relief, and requiring immediate medical or surgical assistance, the Inspector must upon his own responsibility, take measures for procuring without delay, such medical aid as can be obtained, in conformity with the provisions which may have been made, and the instructions which he shall receive from the Parochial Board."

The Board of Supervision were satisfied from the first with the medical provision in the Poor-houses. But the discretionary arrangements for out-door medical relief continued to be unsatisfactory. Thus the Report of the Board for 1846 stated "We are far from being of the opinion that the medical relief afforded to the poor in Scotland generally, more especially in rural and remote parishes, is on a satisfactory footing." To remedy this, Parliament in 1848, voted a grant of £10,000 to provide part of the cost of an improved medical service. The Board used this grant as a lever to raise efficiency. It was laid down as a condition of receiving a subsidy that a Parochial Board must appoint a Medical Officer with a fixed salary to attend sick paupers.⁽⁹⁰⁾ This work on the part of the Board seems to have had beneficial results.

The Poor Law Amendment Act of 1845 was not a great measure of reform. In view of the magnitude of the problem of destitution with which it was supposed to deal, and in view of the advantages which its advocates had expected from Poor Law Reform, the changes made by the Act seem almost insignificant. Never-

theless the Act marked a turning point. The community was at long last made to accept in small measure the responsibilities created by the changed economic structure of the country. Its duty to provide Poor Relief was clearly defined. A new duty to provide for the sick poor was created, and this laid the basis of useful progress in hospital provision and outdoor medical relief. Perhaps that amount of progress was all that could be expected from legislation at that moment. The Poor Law Reformers were right in their diagnosis: poverty was a main cause of the troubles of their time. They were certainly wrong if they believed that destitution as it prevailed in 1845 could be charmed away by an Act of Parliament. Misery and want remained only too common for long after 1845, and with them disease and high mortality rates. As Chalmers had said, it needed something to dry up the springs of poverty, to achieve the results for which the Reformers had hoped. This came slowly with more prosperous times from about 1870 onwards. In the meantime the Poor Law Reform movement had perhaps one unfortunate result: by concentrating attention on one aspect of reform it may have served to slow down other necessary improvements.

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SECTION III

THE SANITARY REFORM MOVEMENT IN THE 19TH CENTURY

In this section the sanitary conditions in Scotland during the first half of the 19th century are described: the difficulties in the way of reform are outlined: and a summary is given of the events which led up to the establishment of effective sanitary government in Glasgow and Edinburgh. Developments in local and central administration are sketched, and their effects on sanitary reform are discussed.

Sanitary Conditions in Early Times. Scotland had a time-honoured tradition of dirt both inside and outside the house: filth and squalor prevailed everywhere, but they reached their extreme in the towns. The chronicles of foreign travellers during the 18th century are full of pithy descriptions of the more unpleasing habits of the people: it was a set piece for every foreign visitor to Edinburgh to describe the remarkable nightly shower of slops which rained from the tenements of the High Street on to the causeway to the accompaniment of warning cries of "Gardyloo."

Attempts to reform the sanitary customs of the people, had almost as old a history as the customs themselves: these attempts were remarkable for their lack of effect, but they are of some interest in indicating that the rules of elementary sanitation were well understood at an early date. Even the central authorities seem to have taken a hand in the struggle to reform the native habits. In 1608 the King himself addressed a letter to the Convention of Burghs dealing with the laying down of middens or "Fulzie" upon the streets, which it was said is "nocht only uncumlie and incivill, bot lykwayis verie dangerous in tyme of plaig and pestilence, and verie infective of itself." The Convention dutifully passed certain enactments to deal with the trouble, and we read that the Town Councils tried to enforce them.⁽¹⁾

About the end of the 17th century the situation in Edinburgh was so bad that the Privy Council threatened to leave the town unless something were done. Their Lordships were moved to say that the town "is now become so filthy and unclean, and the streets, venallis, wynds, and closes thereof so overlaid and covered with middings etc. that the Councillors are resolved to leave their

lodgings" as "they cannot have a clean and free passage and entry to them...nor abide the sight of this shameful uncleanness and filthiness." The remedy suggested was to hold every householder responsible for the purity of the part in front of his own house. (2)

The very frequency of the edicts of the Town Councils against the casting out of filth, and accumulation of fulzie on the streets indicate their ineffectiveness. From time to time an especial effort would be made with short-lived improvement. Thus in 1721 when there was fear of the plague visiting Edinburgh, the Town Council consulted the College of Physicians who returned advice which indicated that the medical men of the time understood the principles of sanitary reform. The College recommended the draining of the Nor Loch, a swamp adjacent to the town: the removal of slaughter-houses and dunghills to some considerable distance from the town: the effective cleaning of the streets, closes and courts: the erection of privies at convenient distances and in convenient places: the provision of Muckcarts to which, on the blowing of a horn, servants should bring their fulzie: the imposition of a penalty on anyone throwing filth out of a window: that all persons, hospitals, and public buildings be kept neat and clean: that all gardeners be ordered to bury decaying vegetable matter: that all vagrants be removed. The College sent their suggestions with the recommendation that they be carried out with all possible speed. But as the fear of pestilence waned the town was allowed to relapse into its ancient ways. Again in 1751, on the fall of an old house in Edinburgh, a general survey was made of the old houses throughout the town, and many of them were condemned and destroyed. (3)

Sanitary Conditions in the 19th Century. The expansion of the towns in the late 18th and early 19th centuries, which took the wealthier inhabitants out to new and healthier suburbs, was accompanied by some effort at sanitary reform which set up new instruments of local government for the purpose. However, the bulk of the people were left in the old parts of the towns which remained as filthy as ever.

Descriptions of conditions during the first half of the 19th century are not lacking: indeed lurid pen-pictures seem to have been a favourite exercise of the medical pamphleteers of the time. Here is one example among many. "It is in those frightful abodes of human wretchedness which lay along the High Street, Saltmarket, and Briggate, and constitute the bulk of that district known

as the 'Wynds and Closes of Glasgow'.....that all sanitary evils exist in perfection. They consist of ranges of narrow closes, only some four or five feet in width, and of great length. The houses are so lofty that the direct light of the sky never reaches a large proportion of the dwellings. The ordinary atmospheric ventilation is impossible. The cleansing, until lately, was most inefficient, and from structural causes, will always, under existing arrangements, be difficult and expensive. There are large square midden-steads, some of them actually under the houses, and all of them in the immediate vicinity of the windows and doors of human dwellings. These receptacles hold the entire filth and offal of large masses of people and households, until country farmers can be bargained with for their removal. There is no drainage in these neighbourhoods, except in a few cases; and from the want of any means of flushing, the sewers, where they do exist, are extended cesspools polluting the air. So little is house drainage in use, that on one occasion I saw the entire surface of a backyard covered for several inches with green putrid water, although there is a sewer in the close within a few feet into which it might have been drained away. The water supply is also very defective; such a thing as a household supply is unknown..... The interior of the houses is in perfect keeping with their exterior. The approaches are generally in a state of filthiness beyond belief. The common stairs and passages are often the receptacles of the most disgusting nuisances. The houses themselves are dark, and without the means of ventilation. The walls dilapidated and filthy, and in many cases ruinous. There are no domestic conveniences even in the loftiest tenements, where they are most needed."⁽⁴⁾

The situation in Glasgow and the other large towns was repeated in parts of every town and village in the country, although the scale of operations was less. It was a situation brought about by numerous causes. The dwellings were commonly dilapidated and squalid, whether they were the great tenements of Edinburgh or the village hovels. The badly paved streets and courtyards of the poorer quarters were collecting places for filth. There were no privies in the buildings, and few privies elsewhere. Excretions were thrown on the middens or into the streets, or else voided directly in the common stairs and closes. The collected fulzie was a source of profit to its owners, and any attempt by the authorities to remove it was greatly resented. Symons describing the closes

of Glasgow in 1838 said "The centre of the court is the dunghill, which probably is the most lucrative part of the estate to the laird in most instances, and which it would consequently be esteemed an invasion of the rights of property to remove."⁽⁵⁾ In other places the individual houseowner might profit from his midden by giving it to a farmer as rent for a patch of ground on which to grow potatoes, or by direct sale for ^ashilling or two per cartload.⁽⁶⁾ Even where towns obtained parliamentary powers to carry out scavenging in their areas, these were usually ineffective for lack of a proper staff to do the job.⁽⁷⁾

If the Scottish people were not famed for their cleanliness they had at least the excuse that water was often difficult to procure. Wells were few and the population increasing: long waits were necessary while others drew their water: the buckets of water might have to be carried considerable distances and up many stairs. There were even enterprising citizens in the towns who made large sums of money by retailing water by the stoup.⁽⁸⁾ The new water companies were not interested in supplying to those who could not pay, and water company enterprise sometimes actually lessened the amount of water available to those who did not pay their rates.

The Medical Profession and Sanitary Reform. The situation called for action: and there were men who saw the need. There was a movement of sanitary reform which was associated with the poor law reform struggle of the 1830's. Some work was done, but it hardly touched the problem. The sanitary condition of the country remained almost as it has been described until the 1860's: and a new generation of reformers had to grow up before the problem was faced resolutely and with effect.

Already at the end of the 18th century the principles of Medical Police were understood by the leading medical men of the time. William Buchan, in 1769, had broadcast a summary of these views in his popular book "Domestic Medicine." Andrew Duncan had delivered lectures on Medical Police in Edinburgh in 1791, and these show an appreciation of the principles formulated by Franck.⁽⁹⁾ A Chair of Medical Jurisprudence was founded in Edinburgh University in 1807, with Andrew Duncan (junior) as the first Professor, and part of his duty was to lecture on Medical Police. In 1809 Robertson had published in Edinburgh his 'Treatise on Medical Police.' In 1819 W.P. Alison succeeded Duncan in the Chair of Medical Jurisprudence, and his lectures show the close attention which

had been paid by the Scottish medical men of the period to the work of the great Service doctors such as Pringle, Lind and Blane, and to the writings of the medical reformers of the English Industrial Revolution such as Percival, Ferriar and Haygarth, That such developments had succeeded in creating a body of medical opinion informed on the essentials of sanitation is shown by the flood of medical pamphlets of the 1820's and 1830's urging the need for such essential sanitary measures as enforcement of cleanliness within and without the house, suppression of overcrowding, regulation of lodging-houses, demolition of unhealthy tenements, and the opening-up of densely populated districts: but half a century passed before these things were done effectively.(10)

Reports on the Sanitary Condition of the Labouring Population of Scotland 1842.

The movement for sanitary reform obtained impetus from the cholera epidemics. From the start of the cholera attacks in 1831 it was apparent that the disease sought out the places which were most befouled with excremental and other filth: and it taught the dangers of the traditional neglect of sanitation.(11) There was great official activity before and during the first cholera epidemic: and the investigations of the Central Board of Health and the many local Boards of Health which were established at that time must have increased official interest in the subject of filth. From then onwards Filth was raised from the level of private disgust to the important status of a public enemy in the propaganda of the sanitarians. This development was particularly apparent in England. In that country the sequelae of the Poor Law Reform gave influence for a time to a body of medical men centred round Chadwick who were wholehearted in their belief that it was the miasmata arising from collections of decaying vegetable and organic matter which were the almost universal cause of disease. These men organised large-scale investigations into the conditions of urban areas of England which were aimed at demonstrating the truth of this theory so clearly that a convinced public opinion would compel the legislative action necessary to banish dirt from the towns for ever. In 1839 the English Poor Law Commissioners obtained permission to turn their attention to Scotland. In that country they appealed for information to the Provosts of Burghs, and through them to officers of medical charities and other medical practitioners.(12)

The results of these investigations were published in 1842 in the 'Reports on the Sanitary Conditions of the Labouring Population of ~~Scotland~~ Great Britain, 1842, Local Report relating to Scotland.' Although these reports revealed a state of dirt and squalor which must have been grati-

fyng, the conclusions drawn from these conditions by the Scottish reporters did not meet with the approval of the epidemiologists who advised the English Commissioners. The Reports throw some useful light on the difficulties in the way of sanitary reform in Scotland. It was difficult to persuade medical men trained and brought up on treatment of Fever, (i.e. Typhus and Relapsing Fever); that these diseases were caused by miasmata. It was only too apparent to them that contagion was the means of spread of infection, and that poverty and misery were the underlying causes. At that time there had been little enteric in Scotland to confuse the picture; and the incidence of cholera had also been observed to be related to destitution. In a community from which little in the way of reform was to be expected the necessity to concentrate on first essentials must have been obvious. Therefore the Reports urge the primary necessity for attack upon the causes of destitution; and they place the cherished reforms of the English Commissioners in a secondary position, without by any means dismissing them as of no importance.

This position was clearly explained in W.P. Alison's report, and similar views were given by other medical contributors. Alison stated: "I take the liberty of observing that the queries of the Poor Law Commissioners appear to have been framed very much in accordance with the belief that the usual cause of typhus, or contagious fever, is a malaria arising from putrescent animal and vegetable matters, and from excretions from the human body, accumulated and corrupting; and that this malaria is developed wherever men congregate and bring together such corrupting matters..... And the recommendations of these gentlemen are accordingly founded in the supposition that by removing all such causes of vitiation of the atmosphere, contagious fever may be arrested at its source, and thus all the evils resulting from it be prevented. Now.....I think it my duty to state to the Poor Law Commissioners (and in so doing I am confident that I express the opinion of a great majority of the medical men in Scotland, who have seen much of the diffusion of typhus fever among the lower orders), that this opinion is not merely a speculative one, but one which ample experience entitles us to regard as erroneous; and at all events, that there is no reason for believing that the contagious fever which has prevailed more or less extensively in Edinburgh for the last twenty-five years has any such origin, or can be suppressed by such measures.

"As, however, I believe that all means of preserving, as far as possible, the purity of the atmosphere in this and other cities are advisable with a view to the general health of the citizens, and will even have a certain degree of effect in restraining the extension of fever, it may be thought that in stating the grounds of my opinion on this subject, I am troubling the Poor Law Commissioners with an unnecessary discussion on a purely speculative matter. But I beg it may be observed, that those who believe continued and contagious fever to proceed originally from a malaria, formed in the way above stated, will naturally think that they do enough for its ultimate prevention in any community, if they carefully remove all such causes of its supposed production; and may therefore suppose that nothing is incumbent on them in regard to the condition or mode of life of the inhabitants of towns infested with such fevers, excepting only to remove from them by all means in their power putrescent animal and vegetable matters; in which case, I am confident that experience teaches that their labours will be in vain; and in Edinburgh in particular, I am convinced from ample observation that a great deal of money might be expended in removing various nuisances, such as irrigated meadows in the neighbourhood, and dunghills in various parts of the town, - all of which would be perfectly ineffectual in preventing the recurrence of epidemic fever, as long as the condition and habits of the poorest of the people, and their resources when reduced by any cause to destitution, in this city and in the other parts of Scotland, continue as at present."(13)

In the absence of any authority which could make new provision for people displaced by sanitary improvements, certain types of reform might even have a harmful effect. Thus in Edinburgh within recent years some of the worst buildings, which were most associated with contagious fever, had been pulled down. Yet, said Alison: "There has been no corresponding improvement in the health of the city: the inhabitants of such places have merely crowded into other parts of the town, where their habits and mode of life continue as before, and their numbers are, I believe, increasing; and within the last three years (previous to which time most of these improvements had been effected) epidemic fever has been both more extensive and more fatal than at any other time."(14)

The reports by no means condemn the idea of sanitary reform: on the contrary the need is clearly realised, but the need for new institutions and laws

is stressed if these reforms were to be effective. Burgh Police Acts had aimed at reform in the past, but they were ineffective because of the lack of proper authorities to enforce them, and because of the inadequate state of the Law governing nuisances. The need for a proper system of Medical Police was urged, for the ordinary magistrates were lax in enforcing the regulations. For Edinburgh an organisation of Medical Police with stipendiary medical officers was recommended. For Glasgow the recommendations went so far as the setting up of a permanent Sanitary Commission with "power to name a medical or other officer, inspectors or inspector, clerks and servants, and to adopt and carry into effect all measures necessary, salutary, or prudent, for preventing and removing nuisances and other things injuriously affecting the public health, for the prevention or diminution of contagious or infectious diseases, and for promoting the health, cleanliness, and comfort of the inhabitants of Glasgow and suburbs."⁽¹⁵⁾ The Stirling correspondent stated the situation clearly.

"The powers of the municipal authorities of Stirling are not sufficient for the purposes of a medical police. They do not, for example, possess the power of entering private property, and removing therefrom nuisances injurious to health. This was seriously felt immediately before the invasion of the cholera in 1832. I am of opinion that a Board of Health ought to be constituted with ample powers to enforce the removal of all nuisances both public and private, the cleansing, whitewashing, and ventilating of the houses of the poor, the suppressing of all lodging-houses harbouring mendicants and vagrants, and the building of new houses for the poor, agreeably to a plan approved of by competent judges. This Board should, in my opinion, be composed chiefly of persons fully and accurately acquainted with the subject of medical police."⁽¹⁶⁾

In the Common Law, a Nuisance had a narrower application than in England. A Police Commission or Town Council could not bring an action for abatement in their public capacity. Action lay between private individuals, and the pursuer must prove personal damage: even then the right to create a nuisance might be made permanent by its use during the period of prescription. The difficulty was illustrated by the case of certain meadows near Edinburgh which were irrigated by the sewage of the town and whose value was much increased as a result. These meadows were a considerable source of offence, and were deemed to be a possible source of danger to health. Yet the Commissioners of Police in

Edinburgh failed in their action for abatement against the proprietors of the meadows because of prescription. Effective action in this case was thought to be possible only by the remarkable expedient of the Crown bringing an action on the grounds that the meadows, which were adjacent to Holyrood Palace, would be harmful to the health of the Queen when in residence: for an ancient Statute excluded the Crown from the rule of prescription. There was urgent need for reform of the law of Nuisances. (17)

The Opposition to Reform. An attempt has been made to show that the need for reform was well understood by informed men in 1840: that the type of reform advocated was the sort which later came about: and that necessity for the removal of certain difficulties in the way of reform was appreciated. Yet we are faced with the fact that it was another generation before these reforms were even begun. In particular, it was not until 1862 and 1863 that Medical Officers of Health were appointed in Edinburgh and Glasgow, and these were the first in Scotland. The explanation for this time-lag lay partly in the apathy or active opposition of the propertied classes who were obstinate in their refusal to see their responsibilities. Charles Baird, who wrote the reports on Glasgow for the English Poor Law Commissioners, was a level-headed lawyer, yet he saw the position clearly in 1841. Writing of the conditions of the poorer classes he said: "Their condition calls most earnestly, if not loudly, for improvement, and woe be unto they who turn a deaf ear to the call! The higher classes are at present far too indifferent to the condition of the poor. They pronounce them reckless, discontented, dissolute, and degraded; but were their wretched abodes and their general condition minutely examined, the surprise would be that they were not more reckless and discontented: and were their abodes and the general condition of the poor improved, we would not only have less misery and wretchedness, but also less tumult and crime in our land." (18)

It is worth while to examine a few instances in which this attitude operated to prevent reform. For property owners and occupiers, improvements meant increased rates. The early development of the Police Commissions indicated that people were ready to submit to some rating where the improvement of their own immediate surroundings was concerned: but it was a long time before they were willing to submit to rating for the benefit of others whose misery they did not share, and they were slow to realise that enlightened self-interest

made certain reforms worth paying for. In 1840 when an assessment was made in Inverness for the Poor's Fund the opposition was such, especially among the small householders, that not a fourth part of the sum assessed could be collected⁽¹⁹⁾. This is in some ways perhaps, a special case: none the less it does indicate the sort of attitude which had to be overcome before local reforms could be carried through.

In addition to the lack of a public sense of responsibility there were many vested interests which stood in the way of improvement: in the face of an attempt at change these could unite in formidable opposition. Thus in 1834 the reformed Town Council of Glasgow started a campaign to acquire the private water works of the town, and to place them under a public board, but the opposition of the water companies was such that the necessary powers were not obtained until twenty years later. Perhaps this type of obstacle is best illustrated by the fate of a Sanitary Improvement Bill sponsored by Edinburgh Town Council in 1846. This would have given considerable powers of reform, and it would have materially affected the interests of certain groups: these were the owners of the irrigated lands to the east of the city, the mill-owners on the Water of Leith, the spirit trade, the owners of private slaughter houses, the pawn-brokers, the dealers in second-hand goods, the proprietors of the class of houses to which sanitary measures were to be applied, and others. These groups either actively or passively opposed the Bill and it had to be withdrawn.⁽²⁰⁾

The Beginnings of Sanitary Reform. So time passed and the situation, if anything, deteriorated. A major typhus epidemic in 1847, and two cholera epidemics in 1848-9 and 1853-4 occurred before any determined effort was made to face the problem. Perhaps it was the effect of this third cholera epidemic which turned the scale. At least in Glasgow it seems to have had that effect, and it was in Glasgow that this new reform movement started. The first result was the passing of the Glasgow Corporation Water Works Act in 1855: this enabled the two private water companies to be taken over; they had provided polluted water, one of them using the River Clyde as its source. New works were sanctioned which enabled the great Loch Katrine scheme to be carried through, and gave Glasgow the finest water supply in the United Kingdom.

In 1857 a "Committee of Nuisances" was appointed, and for the first time

Public Health was differentiated as a special function of local government. This was done under powers given by the Nuisances Removal (Scotland) Act of 1856. In 1859 John Ure, the Chairman of the Committee, submitted a scheme for the sanitary reform of the city. He recommended the creation of a special department under a medical officer with a staff of inspectors for the discovery of nuisances and the control of disease. The Town Council decided to send Ure and another Councillor, with the Chief Constable and the Master of Works, as a deputation to visit the chief towns of the United Kingdom to report on their sanitary government and powers. They visited London, Leicester, Birmingham, Manchester, Liverpool, Edinburgh, Dundee, Aberdeen, Dublin and Belfast. They reported that while the sanitary condition of Glasgow might not be excelled in Scotland or Ireland, it was greatly surpassed in England, a result which, allowing for "the more cleanly habits of the English working classes" and the different style of building, they thought was "undoubtedly also attributable to the extensive powers possessed by the local authorities, the thorough organisation of their sanitary departments, and the enforcement of their sanitary regulations."

The local powers in Glasgow were considered to be inadequate. Ure's scheme for a Sanitary Department was adopted along with his recommendations for increased powers. The necessary powers were obtained in the Glasgow Police Act of 1862, and in 1863 W.T. Gairdner was appointed as the first Medical Officer of Health of the city.⁽²¹⁾ This Act marks the start of the modern Public Health movement in Scotland: the stage was at last set for the beginnings of effective reform. However the causes which had delayed change in Scotland so long had not disappeared overnight. Opposition was still strong, but at last there were weapons with which to fight it. An episode which followed the passing of the Glasgow Improvement Act of 1866 illustrates the persisting opposition. This act gave powers to remove some of the worst slums in the city. Its chief sponsor had been Lord Provost Blackie, and he paid the price for his invasion of the sacred rights of property: he was opposed in his ward election on the express grounds of the Improvement Tax, and defeated.⁽²²⁾

~~The situation as it had been and as it still was, was summed up in 1870~~ by Dr. W.T. Gairdner. Speaking of the position of medical reformers, he said: "I may say our difficulty has been all along the fear that our own position is not sufficiently secure - the fear and the certainty, indeed that we could not

propose, with any chance of carrying public opinion with us, measures of the extremely strong and radical order that are absolutely necessary to cope with the immense evils we have to deal with. Till we have public opinion with us - and this is not only having the arm of the law, as represented by the authorities, with us, but the large concurring force of public opinion - till then, I believe we shall be too weak to cope successfully with the evil."⁽²³⁾

In Edinburgh the movement for reform was carried on after Alison by such men as Doctors George Bell and Alexander Wood, and Mr. Henry Johnston. But it required the fall of an old building in the High Street in 1861 to awaken the inhabitants to the needs of the situation. This accident resulted in thirty-five deaths, and seems to have caused more stir than an epidemic. A public meeting of the inhabitants was held, and eventually a deputation waited on the Town Council and urged the appointment of a Medical Officer of Health. Dr. Henry Littlejohn was appointed to this office in 1862. It was his detailed 'Report on the Sanitary Conditions of Edinburgh,' published in 1865, coupled with the fact that the winter of 1866-7 was one of unusual poverty in the city, which finally led to the passing of the Edinburgh Improvement Act of 1867.⁽²⁴⁾ The work of the reformers over half a century had at last educated public opinion to the point where it was prepared to deal effectively with the problems of the town. Nevertheless there was considerable opposition to the scheme. Resolutions hostile to it were passed in every ward. It was prophesied that the cost would provoke serious discontent "in a town where already the rents and taxes together are said to be higher than in any other town in Scotland." But the lesson had at last been learnt: public opinion was on the whole distinctly favourable: the plan was approved and the Act was passed.⁽²⁵⁾

DEVELOPMENTS IN LOCAL GOVERNMENT:
AND THEIR EFFECTS ON SANITARY ADMINISTRATION.

It has been shown that one reason for the lag in the development of effective Public Health services in Scotland was the lack of adequate powers and institutions of local government. Yet the first developments towards a modern system of local government were begun early. The history of sanitary improvement was paralleled. There was an early appreciation of needs, but a long time had to elapse before local government became effective. This was partly due to the haphazard and piecemeal way in which the new institutions arose: the

government of the towns came to be divided between several different and possibly conflicting bodies, and this division made drastic reform difficult or impossible. A movement towards unification of the different elements had to take place before any large-scale improvements could be carried through. Another factor has already been mentioned: the first of the new institutions were set up to deal with problems of immediate importance to the residents within a fairly small area; under these circumstances the ratepayer saw the value for his money in the shape of improved lighting, watching, and cleansing of his immediate surrounds. It took a long time for municipal patriotism to develop to a point where the individual ratepayer was willing to pay for the same sort of improvements for fellow-citizens who could not afford them for themselves.

The new developments started towards the end of the 18th century to meet the needs of the growing towns. In particular it was to meet the need for an improved system of cleaning, lighting, and watching that the first Police Commissions arose: in a sense sanitation was a development of town cleaning, and the early Police Commissions were the ancestors from which the Public Health Department was to develop. Hitherto the Town Councils had made themselves responsible for these functions in a sort of fashion: but for various reasons they were not able to meet the increased responsibilities brought by recent changes in burgh life. The unreformed Town Councils were corrupt self-perpetuating oligarchies, and since 1788 they had been under constant attack on that account. They would have required increased financial resources if they had attempted to meet the new responsibilities: and these could not have been obtained without admitting some outside control of their methods: for that reason the unreformed Town Councils could play little part in dealing with the changing needs of town life. Moreover the expansion of the towns meant that new communities grew up on the outskirts of the towns which were without the area of the Town Councils' rule: these suburbs were without any sort of local government, and it was to meet the needs of such a suburb that the first Police Commission was established. The expansion of the towns had ended the close knit and peaceful life of the old burgh community, and it was accompanied by an increase in crime and turbulence, so that the need for a better system of Watching than the old Town Guard provided was obvious to the upper classes. It was for these reasons that the new organs of local government grew up piecemeal,

outside the old established system of municipal rule: and it was only after Burgh Reform had been carried out that the Town Councils were able to play their rightful part, and slowly collect into their hands again the control of their towns.

The first Police Commissions were set up in Edinburgh. They were remarkable at the time for being the first instruments of government in Scotland to be established on representative lines: and according to Lord Cockburn they were hailed as a "divine institution." The first one was established by Act of Parliament in 1771 in the southern suburbs of the city. The Act was "for cleansing, lighting, and watching the several streets and other passages on the South side of the city of Edinburgh, and for removing nuisances and annoyances therefrom, and preventing the same for the future." For this purpose a Commission was to be established, and rates levied up to a certain amount. The streets were divided into eight districts. The rate payers of each district were to assemble and elect five commissioners, and also a treasurer, collector and clerk. The whole commissioners were to meet annually, and to choose one of their number to be convener. In the following year a similar Act was passed for the Canongate. In 1785 when it became necessary to levy an assessment for lighting the royalty of Edinburgh, an Act was passed which set up two separate commissions.

Although the process of unifying all these authorities was started as early as 1805, it was at first for the purpose of watching only. Progress was very slow and although the situation was improved by the Edinburgh Police Act of 1848, city government in 1855 was still diffused among many authorities and people. In that year the various bodies which took part in the government of the city were made up as follows:-

The Town Councillors	.. .. .	33
General and resident Commissioners of Police		96
Members of the Paving Board	.. .. .	19
Resident magistrates of the Canongate	.. .. .	3
" " " " Portsburgh	.. .. .	2
Commissioners of the Southern Districts	.. .. .	40
		<hr/>
	TOTAL	193
		<hr/>

It was difficult to get enough suitable people to man this unwieldy structure. Each body and indeed each independent ward had its own set of officials. Relations between the different bodies were a source of trouble; proper co-ordination was impossible and there was a constant danger of collision between them. The first necessity for establishing efficient sanitary government was an administration capable of enforcing its will. It is small wonder therefore that no effective sanitary reform was possible until local government had been unified and improved.⁽²⁶⁾ In Edinburgh, unification was achieved by an Act of 1856, and so the way was laid for sanitary reform.⁽²⁷⁾

The first Police Act in Glasgow was in 1800. This established the same new principles as the Edinburgh Acts had done. For the first time a rate was imposed on the assessed rental of property: it gave the citizens some control and voice in the election of their representatives: by it the principle was conceded that there was to be no rating without representation. The Town Council was a closed body, and therefore the power of rating was not given to it: the Police Board was a representative body with rating power. Furthermore this Act made the first step towards the formation of a Sanitary Department by recognising as a public duty, the cleaning of the streets of the town. However from the first there was a connection between the Town Council and the new Police Board, which consisted of the Lord Provost, the Magistrates, the Dean of Guild, the Deacon Convener, and twenty-four Commissioners chosen by ballot by ratepayers within the twenty-four wards into which the city was divided. The powers of the Board were gradually extended by a succession of Acts, until in 1846 the Board was abolished and its powers handed over to a Committee of the now popularly elected Town Council. Although the movement of unification was begun early, it was not fully completed until 1895.⁽²⁸⁾

In the meantime other parts of what we now call Glasgow had established separate Police Boards, and the town suffered in the same way as Edinburgh from the splintering of municipal government. The situation in 1840 was described by Dr. Cowan as follows: "Over the city and suburbs there are four independent magistracies and boards of police, four assessments for the poor's funds, equally independent of one another." In 1841 the entire community numbered 279,000 inhabitants, of which 37 per cent. were under three jurisdictions distinct from Glasgow proper. The great social and sanitary disadvantages of this subdivision and antagonism were pointed out by Charles Baird in his contribution

to the Reports on the Sanitary Conditions of the Labouring Population of Scotland. A good deal of this confusion was removed by the Act of 1846 which made the royalty of Glasgow conterminous with its parliamentary boundaries: and it was this Act which made eventual sanitary reform possible.

If improvement was very slow in Glasgow, it was not for lack of Police Acts, which were passed in 1800, 1807, 1821, 1830, 1837, and 1843. These acts gave increasing powers and duties: but they were largely ineffective. The Act of 1800 made the removal of refuse and the sweeping of streets a public duty, but the staff to deal with these tasks was totally inadequate. In 1804 fourteen scavengers were appointed, and 1815 the number was increased to sixteen: but they were required to work, in addition, as part-time policemen. It was not until 1843 that an Inspector of Cleansing was introduced and powers were taken by the Police Act of that year "to make regulations for watering, sweeping and cleansing closes, thoroughfares and areas, for the purpose of disinfection and otherwise promoting the health of the inhabitants therein," for the cleansing of common stairs by tenants; for regulating the emptying of middens and privies "according to their dimensions and the local circumstances as regards the health and comfort of the persons in the neighbourhood," to license Common Lodging-Houses, prevent overcrowding and secure the reporting of fever by the keepers; for carrying out disinfection by the magistrates through the police. But although this Act marked a considerable advance, it was chiefly on paper. It provided no executive machinery, and functions were left "as a sort of bye-play to officials appointed primarily for police purposes." How ineffective it had been was shown by the fact that the great typhus epidemic of 1847 was in full swing before any attempt was made to disinfect either houses or clothing.⁽²⁹⁾ And Dr. Sutherland's report to the General Board of Health on the cholera epidemic of 1848-9 showed the gross neglect of sanitation at that time.⁽³⁰⁾

The Central Government had played an ineffective part in ordering the development of local authorities. It is true that the year 1833 had brought considerable developments. In that year the Burgh Reform Act was passed, which gave municipal franchise to the parliamentary electorate. At the same time a Commission was appointed to inquire into the conditions of the burghs and towns of Scotland. This Commission reported in 1835. Among other things the

Commissioners stated that:- "The important interests which the inhabitants of a town have in common render it expedient that they should be placed under one local government, with regard to matters of police and jurisdiction. To all it is essential that the peace of the town be preserved, that there should be functionaries constantly ready to repress petty disorders, and that uniform measures should be enforced for protecting the health and safety of the inhabitants. Their constant dealings with each other, and the collision of rights or interests occasioned by the contiguity and intermixture of small properties, seem also to render it desirable that there should be one judicatory to which all should be equally subject and may equally appeal." It was Jeffery who had framed the Burgh Reform Act of 1833, but in the meantime he had fallen from power with the Whigs. Had he been in office in 1835 he would probably have carried through a measure in keeping with the recommendations of the Commissioners, which would have placed the whole population within the parliamentary boundaries of each burgh under one local authority. But the government of the day preferred to allow fragmentary development. (31)

An Adoptive Act also passed in 1833 had allowed the setting up of police commissions in towns generally. It was the first of a series of Acts whereby burghs of regality or barony, or simply "populous places" might on the resolution of a properly convened mass meeting of the inhabitants, receive the status of Police Burghs. The result of this was the multiplication of police burghs. Fragmentation of municipal government became inevitable, with all that that meant in hindrance to good sanitary administration. (32)

THE ORIGINS OF CENTRAL CONTROL IN SANITARY ADMINISTRATION.

The interest shown by the Central Government in Public Health administration was reluctant and tardy. The local communities had faced the increasingly complex problems of epidemic control and sanitation for many years before the central authorities came to their aid. Indeed it may be said that the beginnings of effective local reform were already established before the central authority made its first adequate contribution to the problem in the shape of the Public Health (Scotland) Act of 1867. Before this Act was passed there had been a period of spasmodic and intermittent interference from the centre. The policy during this period shows slow and reluctant concession to the idea that the Government had any permanent interest in Public Health. The era

during which there was no policy whatsoever was interrupted for a brief period by the cholera epidemic of 1831-2 when the Privy Council was forced to set up a Central Board of Health in London to deal with that particular emergency. It was partly in response to the urging of the Government that local Boards of Health were temporarily established in a number of towns in Scotland at that time. With the passing of the epidemic the interest of the Central Administration in sanitation waned. The setting up of the Board of Health in 1831 was an isolated episode. Nevertheless the responsibility of the Government in epidemic emergency had been admitted, and although it was to be a considerable time before it again interfered in a similar fashion, the period during which the Government could ignore Public Health matters altogether had ended.

The first interference of the government had been for the purpose of dealing with one particular emergency only. It was logical that the next step should be the establishment of machinery to deal with future emergencies: such machinery being to operate only after a state of emergency had been declared in a proper and defined fashion, and for such time as the emergency was officially considered to last. This change of central policy from spasmodic to intermittent interference was introduced by the Nuisance Removal Acts of which the first was passed in 1846. Dr. J.B. Russell summed up the cause and effects of this policy as follows: "Having been taught all that was known of sanitary practice, its method, and the occasion of its use under the lash of epidemic disease, it is not surprising that the legislature should have, in such a school, learned a system of spasmodic sanitation. Such was the method of applying Privy Council orders - legal instruments, under the authority of which affrighted authorities proceeded to administer in drastic doses, that which they ought to have from day to day, exhibited as a mild tonic to keep the body of the community in constant health. This evil method was introduced into Scotland in the Nuisance Removal Acts, various editions of which were passed from 1846 to 1856. They conferred no effective powers for ordinary times, no medical officer, and only in extremity of epidemic pressure, by Orders in Council; duly published in the Gazette, and for specified devoted localities, brought into operation house-to-house visitation, suppression of overcrowding, special cleansing, power to dispense medicine, and provide medical attendance and hospital accommodation."(33) It was not until 1867 that the passing of

Scotland's first Public Health Act marked the long overdue change of government policy from intermittent interference to an admission of responsibility for constant supervision of public health affairs.

It was the passing of the Poor Law Act of 1845 which made possible the policy introduced under the Nuisance Removal Acts. The government made use of the newly established machinery for Poor Law administration in the application of its policy. For the first time there was a statutorily constituted body in every parish in the shape of the Parochial Boards, and a Board of Supervision capable of exerting control from the centre. This historical accident determined the later development of the public health administration. The possibilities of the new machinery were in fact imperfectly realised in the first Nuisance Removal Act of 1846 in which no mention was made of the Board of Supervision and no use was made of the powers of Assessment of the Parochial Board. But the policy was more perfectly adapted to the Poor Law structure in the amended Act of 1848.

This Act was entitled 'An Act.....for the more speedy Removal of certain Nuisances, and the prevention of contagious and epidemic Diseases.' So far as nuisance removal was concerned certain public officers were given responsibility. Broadly speaking these officials were the Commissioners of Police in the towns and the Inspectors of the Poor in the parishes. Upon receipt of a notice in writing from two householders of the filthy condition of any building, or the existence of certain nuisances, they were to cause an examination to be made. If on examination the nuisance was shown to exist, or on receipt of a certificate signed by a medical practitioner to that effect, these officers were to take steps to have the matter corrected by the owner or occupier: in default they were to have powers of entry, and were to do the work ordered at the expense of the owner or occupier. Certain expenses incurred under the Act were to be defrayed out of the poor rate. It is noteworthy that it was laid down that in parishes where no assessment was made for the poor's fund, a special assessment was to be made for the purpose of defraying such expenses. The powers and duties in this part of the Act were to operate constantly.

The powers given by the Act for the prevention of epidemics were only to operate when an order to that effect had been issued by the Privy Council. After such an order had been issued, the General Board of Health (which had been

established by the English Public Health Act of 1848) could issue Directions and Regulations, and could require the Parochial Boards to see to their execution. The Parochial Boards could be required to provide medicines and such medical aid as persons afflicted with the epidemic diseases might require. The Board of Supervision might require their officers to superintend and report on the execution of the Board of Health's Directions: and it was to have the same powers of enforcing these Directions on the Parochial Boards as it had in relation to the administration of poor relief. The necessary moneys for these purposes were to be raised by the Parochial Board by assessment.

It is interesting to study how this act was applied in an epidemic which occurred almost immediately after the act had been passed. Cholera broke out in Scotland in October 1848, (the act had been passed in September), and the Board of Supervision in Edinburgh immediately applied to the General Board of Health for its directions. But without waiting for the official sanction from London the Board addressed a circular to the Parochial Boards of the districts concerned calling their attention to the appropriate sections of the act, and pointing out the necessity of their providing for the proper medical treatment of "all poor persons suffering from symptoms indicating the probable approach or presence of cholera." If their ordinary means were not sufficient they were recommended to increase them forthwith, the necessity for immediate relief in cases of cholera being too urgent^{to} admit of delay. The relief necessary to preserve life must be promptly given, it was said; the inquiries as to the right to demand it could be made afterwards. As soon as the Directions of the Board of Health were received, copies of these Directions were forwarded to all the Parochial Boards. The Parochial Boards were told that a great responsibility devolved upon them for they "Are bound, if other parties fail in performing their duties, to see that none of the Directions issued by the Board of Health are left unperformed."⁽³⁴⁾

In view of the energy which it had shown it is perhaps not surprising that the powers of the Board of Supervision were increased by the next act in the series. This was the 'Act to make better Provision for the Removal of Nuisances, Regulation of Lodging-Houses, and the Health of Towns in Scotland' passed in 1856. Although far from being an adequate Public Health measure, there was a considerable increase in the powers and duties created by this Act.

The local authorities to administer the Act were kept much as before, but in cases of doubt the Board of Supervision was to determine the appropriate authority. Local authorities were given powers to appoint a Committee of their body to administer the Act if they wished. It has already been noted that it was under these powers that Glasgow established its Sanitary Committee in 1857. Local authorities were also given optional powers to appoint inspectors of Nuisances and Inspectors of Common Lodging-Houses. The Act gave the local authorities considerable duties and powers in connection with the control of Common Lodging-Houses which were to be registered and controlled in respect of numbers, cleanliness, infection and so on.

In the part which dealt with the control of epidemics, the emergency was still declared by order of the Privy Council, but there was no mention of the General Board of Health. The Board of Supervision was to be vested with certain powers once the Orders had been issued. It could appoint an additional member, and a medical officer at a salary not exceeding £200 per annum. It had powers to issue Regulations in order to carry out the Orders of the Privy Council. By such Directions and Regulations it might provide for the speedy interment of the dead: for house to house visitations: for the dispensing of medicines, and for affording to persons afflicted or threatened by the epidemic, endemic, or contagious diseases, such medical aid and accommodation as might be required. When an Order in Council was in force, a local authority, on sufficient evidence, might regulate overcrowding in houses according to the provisions of the Act for Common Lodging Houses.

The stage was set for the passing of a general Public Health Act for Scotland, with the Board of Supervision as the central administering body. But first a decent interval of eleven years had to elapse.

CONCLUSION.

So far as the problems which gave rise to these observations are concerned, it seems possible in review to give a fairly definite answer. It cannot be doubted that there was an improvement in the general condition of the people of Scotland during the 18th century, and especially towards its close. Equally it cannot be disputed that the condition of large sections of the population did deteriorate for a time in the early 19th century. The difficulty in reconciling these two statements is explained by the fact that they do not really

deal with the same series of events. The improvement which took place during the 18th century was mainly in the food supply of the country. The population concerned was largely rural. The town dwellers were a smaller and less important part of the population than in the 19th century: moreover haphazard industrialism had scarcely had time to show its disastrous effects. It is probable that the welfare of the rural population continued to improve during the 19th century. The deterioration which took place was among the rapidly increasing urban proletariat. Blind industrial development and exploitation had occurred during the latter part of the 18th century, and the towns had been notoriously unhealthy from earliest times. But it took some time for the full consequences of the new developments in the towns to show themselves. Town communities organised to meet simple needs which had changed little since the Middle Ages were helpless in the face of the new overcrowding. The labourers were victims of an unstable industrial machine. It is small wonder that after a certain point of saturation had been reached, conditions began to deteriorate.

The dilatory way in which steps were taken to meet deteriorating conditions remains as a puzzling problem. Had no attempt been made to curb the process, conditions would have reached some sort of equilibrium eventually. But this equilibrium would have limited the possible extent of urban growth, and would have been at the expense of industrial development. Before modern industrialism could achieve full scope for its expansion, life in the industrial community had to be made more healthy. The fact that some attempt to improve the public health was essential and inevitable makes it all the more difficult to understand why Scotland was so slow to establish effective reform. Strong hospital and dispensary movements in the 18th century had shown promising beginnings of a sense of civic responsibility: but civic patriotism seemed to falter and flag in the face of increasing problems in the 19th century. The needs were appreciated by a minority at least as early, and as clearly, as in England: yet reform was slower. At the same time the problems in Scotland were more acute, for the country had been hustled with disastrous rapidity from a much more primitive social and economic state.

The lag is noticeable in municipal developments: but it occurred at the centre as well; for example, in the failure to extend the provisions of the

Public Health Act of 1848 to Scotland. (英) The tradition of poverty in Scotland no doubt explains some of the delay. The ruling classes, like the rest of the people, lacked a tradition of assured prosperity. They were intent on their own betterment, and few were inclined to study the needs of others: moreover, this attitude received a blessing from the current economic doctrine of laissez faire. Perhaps this tendency to ignore the needs of the community was made more possible by the fact that there was no centre of government in the country where the problems of the people could be forced to their attention. Contact with a wealthier and more powerful country had accelerated change to a disastrous speed: and at the same time the country had lost some of the sense of responsibility for its own affairs. As Scotland entered the 19th century, a century of rule by remote control had left her ill-prepared to meet her new problems.

(英) Professor Ferguson has recently pointed to the reasons behind this failure. Scottish opinion was antagonized by the dogma and centralizing zeal of the men who formulated the government's sanitary policy at the time. The Public Health (Scotland) Bill 1848 would have put local boards of health under the supervision of a secretary appointed by the General Board of Health at Somerset House. Scottish distaste for Whitehall control was intensified by dislike of the theories held by Chadwick and the other bashaws of Somerset House. The Bill was dropped in the face of criticism from the Royal College of Physicians of Edinburgh and elsewhere. (Ferguson Thomas - The Dawn of Scottish Social Welfare. London 1948, pp.147-8).

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A P P E N D I X

(See 'Specimen Dietaries at the end of the 18th Century,' pp 18-21)

FAMILY "A"

(Statistical Account of Scotland, IV, pp. 521-522)

Parish of Kirkpatrick-Juxta (County of Dumfries) by the Rev. Mr. Gabriel Scott.

"As the earnings of common labourers are small, their subsistence and accommodation must be scanty and mean. Small as their expenditure is, I find it very difficult to balance it with their earnings. From all the information I can obtain, I apprehend the following calculation to be pretty near the truth. The labourer has a wife and four children, the eldest 13 years, the youngest 5 years.

Earnings.

	£	s.	d.
The man earns, with victuals, 8d. a day for 265 days	8	16	8
Children's wages	1	0	0
Charity or presents		10	0
	<hr/>		
	10	6	8

Expenses.

	£	s.	d.
Oatmeal, 40 stone, at 1s 8d. the stone ..	3	6	8
Butcher-meat	1	0	0
Wool, 2 stone, spun for clothes		12	0
Milk and butter	1	5	0
Salt		4	0
House-rent		16	0
Barley, 4 stone		6	8
Shoes		15	0
Potatoes for seed, and bought		10	0
Linen, aprons, etc.		10	0
Lying-in and burials, etc.		10	0
Peat		7	0
Tools, repairs of house and furniture ..		4	4
	<hr/>		
	10	6	8

I have omitted several articles of dress and finery, watch, pocket money at weddings, fairs, etc. education of children at school, etc. How these can be defrayed by the earnings of the wife from harvest work or spinning beyond what is necessary for the family, 'tis difficult to conceive. Many, however, who seem to live according to the above calculations, receive no public charity!"

FAMILY "B"

(Statistical Account of Scotland, I, pp. 454-455)

Parish of Auchterderran (County of Fife) by the Rev. Mr. Andrew Murray.

"Annual earnings of a day-labourer, his wife, and three children, deducting four weeks earnings of the man on account of holidays, bad health, attendance on funerals, etc. and excessive bad weather; and four weeks earnings of the woman, on account of holidays, bad health, and lying-in.

	£	s.	d.
To 48 weeks labour of a man at 1s a day	14	8	0
To 48 weeks labour of a woman, in spinning, besides taking care of her house and children	3	12	0
To the earnings of 3 children at the age of six, seven, and eight years, nothing			
	18	0	0

Annual expense of a day-labourer, his wife, and three children:-

	£	s.	d.
By 2 pecks oat-meal a week, at 11 $\frac{1}{2}$ d. per peck ..	4	19	8
By 2 pecks barley or pease-meal a week, at 7 $\frac{1}{2}$ d. a peck	3	5	0
By 6 bolls potatoes, at 5s. a boll.. ..	1	10	0
By barley for kail, at 3 lb. a week		16	3
By a kail-yard, and a wretched house		13	0
By milk, at 4d. a week		17	4
By salt, cheese, and butter		12	6
By soap for washing clothes		2	6
By coals in a year, with carriage	1	0	0
By shoes to the whole family.. ..	1	0	0
By body-clothes to the man	1	10	0
By ditto to the woman and children . ..	1	5	0
By worsted thread for mendings		7	0
	17	18	3

The preceding statement is favourable for earnings, from the number of children, which is rather small; and particularly on account of the ages of the children, as at that period of their lives it is supposed in the calculation

that the woman has it in her power to work half work at spinning, and yet take care of her house and children."

FAMILY "C"

(Statistical Account of Scotland, II, pp. 20-21).

Parish of Dornock (County of Dumfries) by the Rev. Mr. James Smaill.

"The expenses of a common labourer, with a wife and four children, may be nearly as follow.

	£	s.	d.
House-rent, with a small garden or kail-yard ..	1	0	0
Peats or fuel		6	0
A working jacket and breeches, about		5	0
Two shirts, 6s., a pair of clogs, 3s., 2 pair of stockings, 2s. ..		11	0
A hat, 1s., a handkerchief, 1s. 6d.		2	6
A petticoat, bedgown, shirt, and caps for the wife.		9	0
A pair of stockings, 1s., clogs, 2s. 6d., apron, 1s 6d. napkin 1s 6d. for ditto		6	6
A shirt, 2s., clogs, 2s., stockings, 1s., for each of the four children	1	0	0
Other clothes for the children, about 4s. each		16	0
School wages, etc. for the four children ..		10	0
Two stone of oat meal, per week, at 20d. per stone	8	13	4
Milk, 9d. per week, butter, 3d. per ditto ..	2	12	0
Salt, candle, thread, soap, sugar, and tea ..		13	0
The tear and wear of the man and wife's Sunday cloths		10	0
Total outlays	£17	14	4

At the rate of 6s. per week, for 48 weeks, in the year, the man may earn about £14. 8s. Od., the expense of maintaining the family, will therefore exceed the man's annual earnings, about £3. 6s. 4d. per annum; but the deficiency is generally made up by the wife's industry, by her working in hay-time and harvest, when she can earn about £1 10s. Od., and by her spinning through winter and spring, when she may gain from 1s. to 1s. 6d. per week, besides taking care of her family. The labourers usually get some potatoes sent by the farmers who employ them, with any manure they can gather, which is a great help to their family, particularly in the article of oat meal. With that saving they are enabled to buy better clothes, and a little butcher meat for the winter. Indeed, such as are industrious, sober, and economical, live pretty comfortably, and are in general wonderfully well contented with their situation."

FAMILY "D"

(Statistical Account of Scotland, IV, pp. 40-42)

Parish of Auchterarder (County of Perth) by the Rev. Mr. Andrew Duncan.

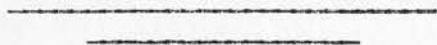
"STATEMENT of the annual Income and Expences of a Day-labourer in the Parish of Auchterarder, who has a Wife and Seven Children, the eldest of whom is a Girl of 13 years of age, and the second a Boy who tended cattle last season. Along with his Dwelling-house, he rents an Acre of Land.

<u>Income</u>	£	s.	d.
The father of the family has 1s. a-day of wages, for 8 months in the year, and 10d. the remaining 4 months. Deducting 43 days, of Sundays, holidays, and bad weather, from the summer-months, and 30 days on the same account, from the winter-months, he gains, during the whole year	13	17	0
The mother, with the assistance of her eldest girl, in the management of her family, earns by spinning 1s. 6d. a-week, which is a-year	3	18	0
The eldest boy earned by tending cattle		18	0
The acre of land produced last year, 6 firlots of oats at 13s. 6d. the boll	11	0	3
--- 4 bolls of barley, at 14s. the boll	2	16	0
--- 6 bolls and 2 firlots potatoes, at 4s. which is £1 6s. He sold a calf at 7s.	1	13	0
	£24	2	3

<u>Expences</u>	£	s.	d.
Rent of his house and land £3; expences of seed and management, £1 5s.	4	5	0
Fuel, £1 5s.; 8 bolls and 2 firlots of oat-meal at 14s. 6d. a-boll, £6 3s. 3d.	7	8	3
4 bolls of barley-meal at 9s. 4d. the boll	1	17	4
The father's wear of clothes, 2 shirts, 7s.; 2 pair shoes, 10s.; 2 pair stockings, 4s. 6d.; wear of a bonnet and handkerchief, 1s. annually	1	2	6
The mother's wear of clothes, 4s.; 1 shift, 2s. 6d.; 2 aprons, 2s. 3d.... ..		8	9
Wear of shoes and stockings, 4s.; handkerchiefs, caps, etc. 3s.		7	0
1 pair of shoes to each of 7 children, 14s. 2d.; clothes to the 3 youngest, 9s.	1	3	2
Clothes to the 2 next in age, 8s.; ditto to the 2 eldest, 10s.... ..		18	0

	£	s.	d.
1 shirt to each of the 3 youngest, 2s.; 1 ditto to the 2 next in age, 2s. 6d. 		4	6
1 ditto to the 2 eldest, 3s. 4d.; 8 lb. of soap, 4s. 8d.; butcher-meat, 18s. 	1	6	0
4 pecks of salt, 3s. 4d.; 3 Scots pints of lamp-oil, 3s. 6d.; candle, 2s. 2d. 		9	0
Besides the milk, butter and cheese, the cow yielded, he bought last year 2 stone cheese ..		8	0
Molasses for making a kind of ale, 4s. 6d.; groats and barley, 7s. 		11	6
Expences at in-lying, sickness, etc. 15s.; needles, pins and thread, 10d. 		15	10
Whisky, small beer, and wheaten bread at the new year. 		3	4
The family consumes the potatoes which the land produces .. .. .. .. ..	..1	6	0
Grass to the cow in summer, 10s.; straw to ditto, in winter, 6s. 		16	0
		<hr/>	
	£24	0	2

The generality of labourers, along with their dwelling-house, have as much land as enables them to keep a cow, which encreases their means of subsistence."



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