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TUBERCULOSIS IN SCOTLAND, 1870-1960

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ABBREVIATIONS

B.C.G.	-	Bacillus Calmette Guerin.
B.J.T.B.	-	British Journal of Tuberculosis.
B.M.A.	-	British Medical Association.
B.M.J.	-	British Medical Journal.
E.H.S.	-	Emergency Hospital Scheme.
E.M.J.	-	Edinburgh Medical Journal.
G.C.H.C.	-	Glasgow Corporation Health Committee.
G.G.H.B.	-	Greater Glasgow Health Board.
G.M.J.	-	Glasgow Medical Journal.
G.P.	-	General Practitioner.
L.G.B.	-	Local Government Board.
M.O.	-	Medical Officer.
M.O.H.	-	Medical Officer of Health.
M.R.C.	-	Medical Research Council.
N.A.P.T.	-	National Association for the Prevention of Tuberculosis.
N.F.	-	William Quarrier's Narrative of Facts.
R.G.N.	-	Registered General Nurse.
R.V.H.	-	Royal Victoria Hospital.
S.R.A.	-	Strathclyde Regional Archives.
S.R.O.	-	Scottish Records Office.
S.S.H.M.	-	Society for the Social History of Medicine.

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CHAPTER ONEINTRODUCTION1. EXPLICATION

A subject long neglected by social and economic historians, tuberculosis is now beginning to attract the attention it deserves as the greatest single killer of young people over the last two hundred years. At the turn of this century, when mortality from the disease was on the decline, tuberculosis was still responsible for the deaths of eight thousand men, women and children in Scotland each year. Most of its victims were aged between fifteen and forty. As a killer, maimer and major cause of poverty, the disease cut great swathes through the economic potential of the Scottish economy.

F.B. Smith and Linda Bryder have recently published books which have done much to broaden our understanding of a disease whose incidence is largely determined by socio-economic factors.¹ Both have examined the problems the disease created along with the medical, social and political responses it induced at the national level. While such an approach is natural, there are advantages to be gained from studying the disease from a more local perspective. A case study of the disease in Scotland offers particular insights into the problems and solutions adopted.

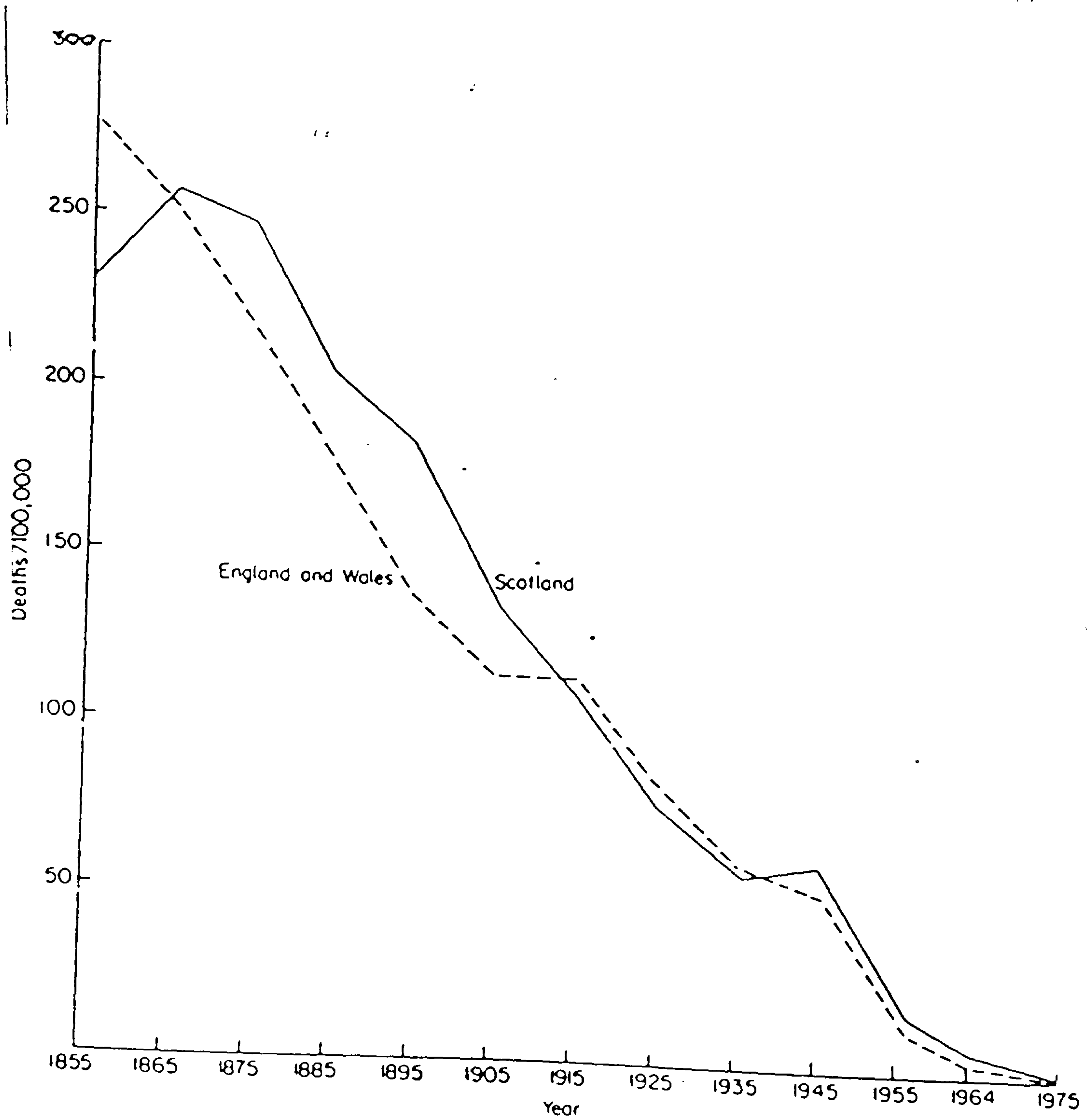
¹ F.B. Smith, The Retreat of Tuberculosis 1850-1950. (1988). L. Bryder, Below the Magic Mountain. (Oxford 1988).

Scotland experienced a different epidemiological pattern of the disease than England and Wales, particularly during the two world wars. (see Fig.1.).² Thus the disease continued to decline in Scotland during the First War while its incidence increased in England and Wales. During the Second War the position was reversed, Scotland suffering a marked increase in mortality. Differences in mortality patterns can be particularly illuminating when attempting to identify the underlying causes of disease. Answers will be sought to the reasons why respiratory tuberculosis mortality fell faster in Scotland in comparison to England before 1920 and why the decline slowed thereafter. By so doing, this study should also contribute to the debate concerning the effects of economic depression on the health of the interwar population.³ Charles Webster has criticised J.M. Winter's contention that there was a marked improvement in health in Great Britain during these years. Having broken down the national statistics geographically, he argues that the depressed areas did not enjoy any noticeable improvement in overall levels of health. An examination of the reasons behind the retardation in tuberculosis mortality decline in a large depressed area such as the West of Scotland can question whether or not

2 Source : Sir J. Crofton and A. Douglas, Respiratory Diseases. (Edinburgh 1981).p.181.

3 C. Webster, 'Healthy or hungry thirties.' History Workshop Journal 13. 1982. pp.110-129. J.M. Winter, 'The decline of mortality in Britain 1870-1950.' in Barker and Drake (eds), Population and Society in Britain 1850-1980. (1982).

Fig. 1(i). - Respiratory tuberculosis mortality decline, Scotland, England and Wales, 1855-1975.



the underlying causes should be attributed to short or long term economic changes.

Scotland also differs from Britain in having a very powerful medical tradition, indeed the national campaign against tuberculosis had its origins in Edinburgh in the 1880s. The Glasgow and Edinburgh Medical Journals devoted much space to discussing the problems of tuberculosis and now provide invaluable insights into historical perceptions of the treatment and administration of the disease. In addition, Scotland had a great public health tradition, particularly in the major cities. Medical Officers of Health such as Gairdner, Russell and Chalmers in Glasgow and Williamson in Edinburgh were greatly exercised by the high mortality rates attributable to tuberculosis. Steeped in the rational, scientific ethos of the Scottish enlightenment, they set out to both quantify the problem and analyse its causes. Their legacy to the historian is a unique collection of small area statistics providing invaluable material on the relationship between the incidence of tuberculosis and the social, ethnic and economic status of different sections of the Scottish urban population.

During the first decade of the present century tuberculosis began to attract the attention of social reformers in Great Britain. For the first time, tuberculosis was identified as a 'national problem', a problem so serious that only the state was capable of mobilising the resources needed to tackle it effectively. In Below the Magic Mountain, Bryder has asked why this

should have been so, particularly as the disease had been on the wane since at least the 1860's in England and Wales. She concluded that the desire to promote greater 'national efficiency' was a major driving force behind the anti-tuberculosis campaign launched in the early 1900s.

Smith has also examined the response induced by the problem of tuberculosis. He argues that interest in the disease was fostered by an influential part of a more self-confident medical profession which believed that respiratory tuberculosis could be cured by sanatorium treatment. He also argues that Poor Law infirmaries were indirectly responsible for the retreat of the disease because infectious paupers could be isolated within them. This theory, originally popularised by Arthur Newsholme and the pro-sanatorium movement, has also been resurrected more recently by L.G. Wilson who has used it to attack Thomas McKeown's long-standing argument that rising standards of living were principally responsible for the demise of tuberculosis over the last two centuries.⁴

4 L.G.Wilson, 'The historical decline of tuberculosis in Europe and America: its causes and significance.' Journal of the History of Medicine and Allied Sciences. 1990. Vol.45. pp.366-396. Newsholme's first writing on the subject was, 'An inquiry into the principal causes of the reduction in the death-rate from phthisis during the last forty years with specific reference to the segregation of phthisical patients in general institutions.' Journal of Hygiene (6) July 1906. pp.304-384. McKeown's theory shall be examined in some detail in Chapter Four.

Thus Bryder and Smith have addressed the question of why tuberculosis was regarded as such a serious problem at this time and have examined the solutions which were proposed and adopted. Chapter Two below also examines the reasons behind the inauguration of the state-sponsored campaign against the disease. The attack on tuberculosis was based on the methods pioneered by Robert Philip in Edinburgh in the 1880s. The rationale behind Philip's 'Edinburgh Scheme' will be questioned as, too, will the reasons for its being adopted by the state and implemented nationally following the introduction of the tuberculosis provisions in the 1911 National Insurance Act. By concentrating on Scotland, and on Glasgow in particular, it is possible to examine these questions in greater detail at the local level. In such a way, we can see what actually happened as opposed to what was merely legislated. Both Bryder and Smith's arguments shall be tested from this perspective to determine whether they adequately describe the Scottish experience.

The second chapter also questions Wilson's and Smith's view that Poor Law institutions were the most important factor in accounting for the retreat of tuberculosis. The Scottish Poor Law differed significantly from its English counterpart, particularly with respect to the provision of indoor relief. By examining both the operation of the Poor Law in Scotland and the pattern of mortality decline at a more local level it will be possible to question the assumptions made by the early supporters of the sanatorium movement.

Both Bryder and Smith have been particularly scathing about the anti-tuberculosis campaign's emphasis on the provision of institutional treatment. Chapter Three describes the anti-tuberculosis schemes established by the local authorities in Scotland after 1911, including both the difficulties imposed by the existence of a multiplicity of small authorities each responsible for some aspect of public health and the problems particular to the Highlands and Islands.

The state sponsored schemes will be evaluated in terms of the results they achieved in both curing and preventing tuberculosis. Using cost benefit analysis made possible by the existence of detailed information preserved in Glasgow Corporation's archives, the city's experience should suggest how far Smith and Bryder are correct in deriding the efforts of the anti-tuberculosis campaign. This chapter also questions why such treatment was continued for over four decades and why more radical prescriptions to the problem were largely ignored.

Perhaps one reason why tuberculosis was long neglected as a subject for study by social historians is that the epidemiological evidence can be treacherous. Unless handled with extreme caution, evidence can readily be found to explode even the most plausible sounding explanations as to why tuberculosis mortality declined. Those expounding monocausal explanations are particularly vulnerable. As will be seen in the next section, part of the problem lies with the fact that it is still not fully understood why some people contracted clinical

tuberculosis while the majority did not. At the turn of century almost everyone in Scotland had been infected by the bacillus by the time they reached young adulthood. Although mortality levels were horrific, they were small in proportion to the numbers infected. The aetiology of the disease is also extremely complex, making it difficult to determine what particular factors may have been responsible for an individual contracting tuberculosis.

Following Gillian Cronje's example in attempting to analyse tuberculosis mortality statistics for England and Wales in the nineteenth century, Chapter Four will describe the Scottish mortality experience between 1870 and 1960.⁵ Mortality is broken down by geographical location, by age and by sex. Further distinction will be made between rural and urban mortality. By so doing it should then be possible to establish the trend in tuberculosis mortality decline in Scotland over this period.

The numerous factors which have been cited as essential determinants of the retreat of the disease can then be examined to see if any single factor adequately accounts for the mortality trend in Scotland. Particular emphasis will be placed on a case-study of Glasgow, a city at one time notorious for its incidence of the disease. There are three main reasons for this. Glasgow's large population, about a fifth of Scotland's total

⁵ G.Cronje, 'Tuberculosis and mortality.' in R.Woods and J.Woodward (eds), Urban Disease and mortality in Nineteenth Century England. (1984). pp.78-101

population in the interwar years, exerted a very strong influence on national mortality rates. Thus had tuberculosis been particularly prevalent in Glasgow but not so in the rest of the country, it might still have appeared as if Scotland as a whole had a higher than average mortality from the disease. Secondly, Glasgow had a long tradition, beginning in the 1870s, of maintaining accurate small area statistics which can be used to compare mortality in terms of, for example, social class or levels of overcrowding. Finally, and most importantly, Glasgow had a markedly different experience of tuberculosis from comparable cities in England. Such differences are more illuminating than similarities when trying to relate putative causal factors to mortality trends. Thus Glasgow had a much faster mortality decline than the English cities before 1920, but thereafter the latter caught up and then continued to enjoy a far better record with respect to the disease. If it is possible to identify factors more prevalent in Glasgow at these times, greater weight can be attributed to them as being responsible for precipitating or retarding the retreat of tuberculosis.

Attention will be focussed on the two causal factors most often cited as having performed a critical role in accounting for the demise of tuberculosis: rising real living standards and improvements in public health services. The relationship between overcrowding and tuberculosis mortality will be subject to particularly close scrutiny because it was widely believed that

overcrowding was the principal villain in accounting for the higher prevalence of the disease north of the border. Furthermore, tuberculosis mortality rates have figured prominently in the debate concerning mortality decline over the last two centuries both because the disease was a major killer and because its decline was far more precipitate than general mortality decline. Thomas McKeown and, more recently, Simon Szreter, have argued that the forces which drove tuberculosis into retreat must also have been responsible for a major part of the general mortality decline. Where McKeown favours rising real living standards as the most likely explanation for the decline, Szreter argues that such an explanation understates the role played by improvements in public health provision.⁶ Chapter Four will test these contending theories in the light of Scotland's experience of declining tuberculosis mortality.

Chapter Five returns to the administrative efforts to combat and control the disease; it describes the crisis faced by the anti-tuberculosis schemes caused by the increase in morbidity and mortality in Scotland following the outbreak of the Second World War. The social and medical measures adopted to contain the crisis, many of which had been proposed in the interwar years, are described and their effectiveness evaluated.

⁶ T. McKeown and R.G. Record, 'Reasons for the decline in mortality in England and Wales during the nineteenth century.' Population Studies. No.16.1962. pp.94-122. S.Szreter, 'The importance of social intervention in Britain's mortality decline c.1850-1914: a reinterpretation of the role of public health.' Journal of the Social History of Medicine. No.1. 1988. pp.1-37.

The crisis was partly brought about by a drastic shortage of nurses willing to work in tuberculosis institutions. Drawing on the experiences of the nurses themselves, the difficulties underlying the staff shortages are examined along with the solutions adopted. The crisis was overcome in a relatively short space of time, but salvation came from an unexpected quarter. A cure was discovered for tuberculosis. The revolution in treatment occasioned by the use of effective chemotherapy saved many lives in Scotland. Streptomycin and associated drugs changed not only the management of the disease, but also brought about a sharp change in the public's attitude to tuberculosis. Negative perceptions gave way to a more sympathetic attitude towards sufferers of tuberculosis. Nowhere was this more keenly felt than amongst the victims of the disease themselves.

The final chapter properly belongs to these people. Tuberculosis has been described as a medical problem, as a social problem, as a racial problem and as an economic problem, but for its victims it was far more than a potentially fatal disease. Tuberculosis affected those who survived its grip out of all proportion to its powers to physically debilitate. It was not just that the disease was a great immiserator, tuberculosis imposed social barriers of its own. Chapter Six allows the victims of the disease to describe how they were treated by the medical profession and by the community at large.

2. TUBERCULOSIS

Tuberculosis is older than civilisation itself. There is evidence that it was known to the ancient Chinese as early as 2698 B.C.⁷ Although it is impossible to quantify how widespread the disease was before the eighteenth century, it was certainly common among urban populations. Nineteenth century urbanisation and its attendant social evils undoubtedly facilitated the spread of tuberculosis. In Scotland mortality from the disease was increasing prior 1870 but thereafter declined markedly. A similar decline had begun two decades earlier in England and Wales. With the exception of the two world wars and isolated pockets of urban resistance, the disease continued to retreat on a broad front in Britain until it was finally routed by the development of effective chemotherapy in the 1950s. While the post-war generations of the developed world were the first to be freed from paying heavy tribute to what Bunyan described as the 'captain of all the men of death', as late as 1970 tuberculosis was still responsible for three million deaths every year, principally in the third world.⁸

The disease is caused by the tubercle bacillus, Mycobacterium tuberculosis, first identified by Robert Koch in 1882. Two types of the disease, human and bovine, are pathogenic to man. The human type is transmitted by

7 G.N. Meachen, A Short History of Tuberculosis. (1936) p.1.

8 Crofton and Douglas, Respiratory Diseases. op cit p.181.

sufferers of respiratory tuberculosis through the medium of their sputum, either spray-borne through coughing, spitting or talking or dry via dust in the air. The bovine bacilli are transmitted through meat and milk taken from tuberculous cattle. As such its principal victims tended to be children whose meninges, bones, joints and lymph glands were attacked by the disease. Although more often associated with non-respiratory tuberculosis, bovine bacilli can also cause respiratory tuberculosis.⁹ In Scotland the respiratory form of the disease was responsible for over eighty per cent of total tuberculosis mortality.

Until the 1960s most people in Great Britain had been infected by the bacillus at some time in their lives. In the majority of cases the host defences were capable of limiting infection, but those who received large or repeated doses, or who possessed little or no resistance to the disease, could develop clinical tuberculosis. An individual's susceptibility to the disease is dependent upon a number of factors. Humans possess an inherent resistance to the bacillus. They can also acquire resistance after being exposed to a primary infection or through B.C.G. (Bacillus Calmette Guerin) vaccination. Given the universality of infection, resistance was clearly all important. Resistance itself, however, is dependent upon a number of closely interrelated variables, notably age, sex, heredity and,

⁹ A.R. Rich, The Pathogenesis of Tuberculosis (Oxford 1951). p.56.

most influential of all environment, particularly with respect to diet and living conditions. Of those who do develop clinical disease, in some the immune system breaks down shortly after infection, while for most the primary infection is contained but resistance fails later in life when the host may become weakened by other illnesses, poor nutrition, aging or stress. The aetiology of the disease thus makes it extremely difficult to determine in an individual case what exactly caused 'tuberculosis'. Without the bacillus there can be no disease, but at a time when almost everyone had been infected, the circumstances which caused the immune system to fail can also be said to have brought on 'tuberculosis'. The problem is compounded by the fact that adverse environmental conditions during childhood may not manifest themselves in clinical disease until young adulthood. The process of infection, activation and reinfection is still imperfectly understood.¹⁰ This complex aetiology renders epidemiological study of the disease highly problematic.

Clinical respiratory tuberculosis usually takes a long chronic course punctuated by periods of activity and remission. The general condition of the patient may be excellent, even with relatively advanced disease, making diagnosis difficult without x-rays or sputum tests. Symptoms include cough, night sweats, haemoptysis, chest pain, recurrent colds, ~~a~~menorrhoea and loss of appetite, but these need not always manifest themselves. Thus a

¹⁰ Smith, Retreat. op cit p.2.

seemingly healthy person could be a source of infection for years. Generally, the more chronic the case of respiratory tuberculosis, the more infectious the victim became. Hence the attractiveness of the idea of isolating the victims of the disease.

The history of the response to the disease is also as old as civilisation. The term 'phthisis', derived from the Greek 'to consume', was first attributed to Hippocrates who also pre-empted the fresh-air school of the late nineteenth century by advising sufferers to 'buy a cow, drive the cow to the mountain and live off the cow.'¹¹ During the middle ages the most sought after remedy for non-respiratory tuberculosis was the 'King's touch', a practice which lasted until the reign of Queen Anne, sufferers presumably having had a lean time during the interregnum.¹² For respiratory tuberculosis, remedies included bleeding, inhaling the breath of a stallion, the Scots preferring cattle, and inhaling the miasma of maggots or snails.¹³ The latter was still a common practice in the trenches of Flanders and, as will be seen, in Glasgow in 1911. The nineteenth century upper classes adopted a rather romantic view of consumption, but the reality of the disease for the bulk of the population was that of a long, slow, painful slide towards poverty and death.

11 The ancient Greeks did not know about bovine tuberculosis.

12 Meachen, A Short History. op cit p.15.

13 F.B. Smith, The Peoples' Health 1830-1910. (1979) p. 293.

Although it had long been suspected by some that tuberculosis was an infectious disease, it was not conclusively proven until 1882. Koch's revelation lent further impetus to the 'open-air school' of treatment which was gathering momentum at this time. Boddington in England was the first to recommend fresh air to ameliorate respiratory tuberculosis in the 1840s, but his ideas were not taken on board by the nascent medical profession. The sanatorium movement was pioneered by Herman Brehmer in the German alps in the early 1860's and soon spread to Switzerland and Austria. Their position was strengthened by arguments that patients needed to escape contaminated air. Fashionable British physicians began to recommend sanatorium treatment to their wealthier patients. In time, sanatoria were established in Britain for those unable to afford to travel and stay abroad for long periods of time. The first sanatorium in Scotland was opened in 1894 at Craigleith near Edinburgh. At the same time tuberculosis began to attract increasing public attention. Chapter Two explains why this was so.

CHAPTER TWO

THE DECLINE OF TUBERCULOSIS AND THE RISE OF THE ANTI-TUBERCULOSIS SERVICE 1870-1911.

1. INTRODUCTION

At the turn of the century the problem of tuberculosis began to attract increasing public concern, not only in Great Britain but throughout the industrialised world, culminating in its being singled out for special provision in the National Insurance Act 1911. This is, perhaps, surprising given that the disease had been on the wane from at least the 1860's in England and Wales and from the 1870's in Scotland. Nor can this increasing interest be attributed to the discovery and acceptance of the germ-theory of disease. After all Koch had isolated the bacillus in 1882. Two explanations which may account for this interest, however, are the contemporaneous concern over poverty and national efficiency, coupled with a growing belief by a section of a more self-confident medical profession that respiratory tuberculosis could be cured.

As the major killer of young adults, respiratory tuberculosis was an obvious target for those calling for greater national efficiency.¹ This movement, embraced by individuals and organisations ranging across the entire political spectrum, gathered momentum following the

¹ See, Searle G.R. The Quest for National Efficiency. (Oxford 1971). J.R. Hay, The Origins of the Liberal Welfare Reforms 1906-14. (1975).

scandal occasioned by the discovery of the general low levels of health prevailing amongst working-class men recruited to fight in the Boer War. Lloyd-George was clearly addressing such an audience when he introduced the sanatorium benefit clauses in the 1911 National Insurance Bill.

There are 75,000 deaths per year in Great Britain from tuberculosis, and a much more serious matter, if you take the ages between 14-55 amongst males, one in three dies of tubercular disease in what should be the very period of greatest strength, vigour and service.²

As will be seen, the disease was also imposing an ever increasing burden on the poor rates, which were not intended to raise money to treat infectious diseases, let alone a long-term, chronic disease like respiratory tuberculosis. There was also a marked change in attitude towards poverty at this time.³ Bodies such as the Charity Organisation Society had long regarded the poor as belonging to one of two categories, 'deserving' and 'undeserving'. As sufferers from an infectious disease, it began to be argued that the tuberculous could not and should not be treated under the Poor Law. The strains imposed on the poor rates were exacerbated by the policy of the general hospitals to exclude respiratory tuberculosis cases from their wards once the infectious nature of the disease had been proven beyond doubt.

2 Hansard 4th May 1911, Vol.XXV. p.626. Lloyd-George was mistaken. As Bryder points out, he should have said that one out of three deaths between the ages of fifteen and fifty-five was attributable to tuberculosis. Mountain op cit p.37.

3 I. Levitt, Poverty and Welfare in Scotland 1890-1948 (Edinburgh 1988) pp.44-75.

The policy of the general hospitals in excluding phthisis cases would sooner or later have compelled attention to the hospital requirements of the consumptive, quite apart from the importance which in recent years has been ascribed to sanatorium treatment and isolation.⁴

Prognosis of respiratory tuberculosis in the late Nineteenth Century had invariably been 'grave, very grave - indeed, almost the grave.'⁵ At a meeting in Glasgow, called to promote the establishment of a local branch of the National Association for the Prevention of Tuberculosis in 1901, a resolution was passed declaring that respiratory tuberculosis was 'not so much an incurable disease as infectious, preventable and curable.'⁶ Necropsies had shown that tubercular lung lesions normally healed spontaneously, while tuberculin testing had revealed that the majority of the population had been infected by the bacillus without suffering any noticeable ill-effects.⁷ It was believed that rest and fresh-air assisted this healing process and thus the sanatorium movement, pioneered in Germany in the 1860's, was lent a pseudo-scientific rationale.

4 A.K. Chalmers, M.O.H. Report Glasgow 1911. p.87.

5 A. Gibson, 'The general practitioner's position in relation to pulmonary tuberculosis.' Glasgow Medical Journal (G.M.J.) Oct. 1913. p.419.

6 G.M.J. April 19th 1901. p.286. Not every doctor was so convinced as to the curability of respiratory tuberculosis. In 1902 the Glasgow Southern Medical Society concluded 'that only to a limited extent could phthisis be regarded as a curable disease.' G.M.J. April 3rd 1902. p.457.

7 In 1900, Nageli in Zurich reported that ninety-seven per cent of all patients dying in hospital showed definite signs of tuberculosis infection. See, R.W. Philip, 'Present-day Outlook on Tuberculosis.' Edinburgh Medical Journal (E.M.J.) 1918. p.281.

A number of other factors were also involved in generating interest in tuberculosis. As the great nineteenth century killers such as typhus, cholera and smallpox were brought under control, the death-rates from tuberculosis, although declining, assumed a relatively greater importance. In 1898 a National Association for the Prevention of Consumption and other forms of Tuberculosis was formed under royal patronage. This was to become a highly effective pressure group, both in advocating sanatoria and in disseminating propaganda on the infectious nature of the disease. As an additional factor, sanatorium treatment for the insured working-class had been introduced in Germany in the late 1890's. It was argued that death-rates had fallen as a result. The German example was often cited as evidence that similar treatment ought to be made available in Britain.⁸ It was also argued that mortality had declined as a result of segregating consumptive paupers in Poor Law institutions.⁹ It was thus believed that more institutions would lead to less tuberculosis.

This first chapter will examine why sanatoria were believed to be the answer to the problem of respiratory tuberculosis amongst the working classes. By looking at existing agencies for dealing with the disease, notably

8 For contemporaneous comment on the German statistics for sanatorium 'cures' and Lloyd-George's dubious use of them, see W.A. Brend, Health and the State. (1917). On the influence of German social policy on the 1911 National Insurance Act, see E.P. Hennock, British Social Reform and German Precedents. (Oxford 1987).

9 Newsholme, 'Inquiry into the reduction in the death-rate from phthisis.' Journal of Hygiene 1906 (6) op cit.

the Poor Laws and charity, it will be shown that they were manifestly incapable of providing more than palliative treatment to a minority of sufferers. Responsibility for treating and preventing the disease gradually devolved upon the local health authorities. These authorities, however, had too few resources to provide the perceived need for institutional treatment. The 1911 Act was to provide these in part. It will also be shown that the belief that sanatoria would benefit the working-class consumptive was far from universal, and it will be argued that their provision diverted attention and resources away from those who advocated an attack on poverty and overcrowding as a prerequisite for eliminating tuberculosis.

Any modern history of the campaign against tuberculosis in Scotland must begin, however, in Edinburgh, where Robert Philip established the world's first tuberculosis dispensary in 1887.

2. ROBERT W. PHILIP and 'THE EDINBURGH SCHEME'.

The modern history of the fight against tuberculosis in Scotland can be said to date from 1887, when Robert W. Philip founded the world's first tuberculosis dispensary in Bank Street, Edinburgh. Within seven years he had also opened Scotland's first tuberculosis sanatorium at Craighleith, a mile outside the city. Thereafter, Philip's name became synonymous with the treatment of tuberculosis. As the instigator of the 'Edinburgh

Scheme', as the man who successfully persuaded the state to adopt it nationally and as Britain's first Professor of Tuberculosis, whose ideas and teachings influenced two generations of tuberculosis specialists, Philip was undoubtedly,

the acknowledged father of the Service, to whose initiative and foresight all our tuberculosis schemes and the principles of our national campaign owe origin.¹⁰

The son of a Glasgow minister, Philip graduated in medicine in 1882, the same year that Koch discovered the tubercle bacillus and proved the disease to be infectious. Philip first encountered the bacillus the same year during post-graduate study in Vienna. Five years later he won an Edinburgh University Gold Medal for his M.D. Thesis on the aetiology of phthisis and announced his intention of establishing a tuberculosis dispensary to further investigate the social implications of the disease. He was strongly advised against such a move on the grounds that, 'phthisis is worn to a thin thread. The subject is exhausted'.¹¹

Undaunted, Philip pressed ahead. During the next twenty years he gradually developed, with the charitable aid of the Royal Victoria Hospital Trust, what became known as the The Edinburgh Co-ordinated Scheme Against Tuberculosis. Since Philip believed that the disease could be tackled only through social organisation, two main ideas underpinned the scheme. The first was that

10 Obituary, Public Health. March 1939. p.164.

11 Philip, 'Present-day Outlook'. E.M.J. 1918. op cit. p.290.

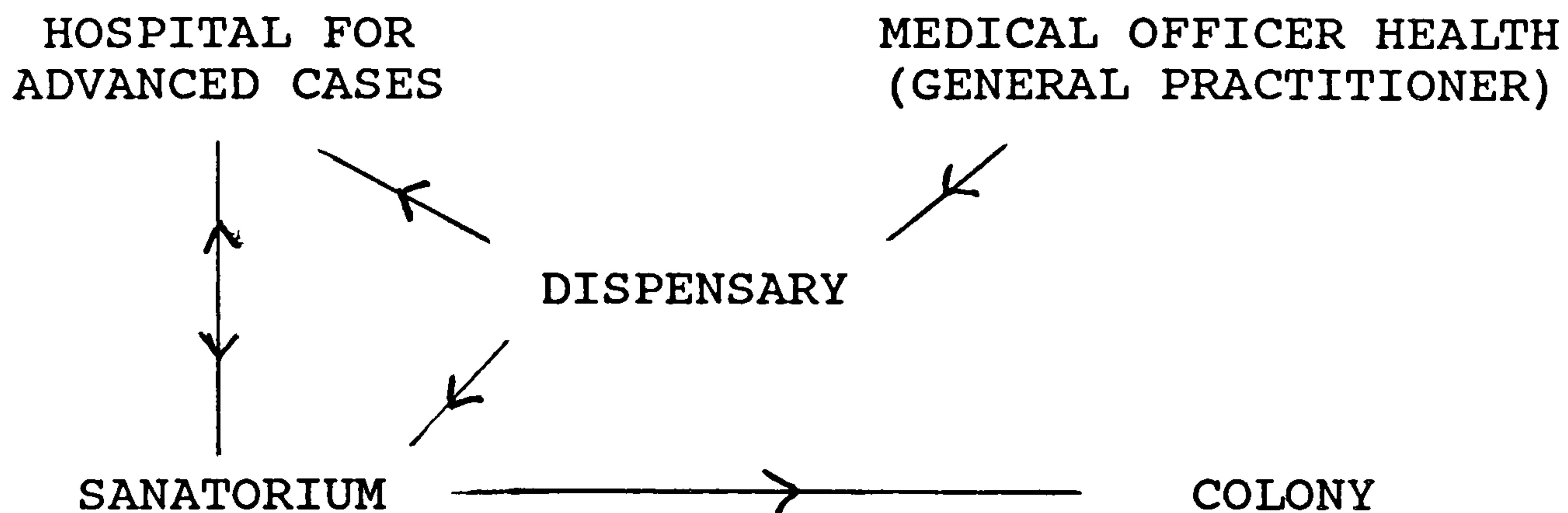
once a patient presented himself for treatment, the disease was probably already too advanced to treat. 'Early' cases had, therefore, to be sought out. This was to be accomplished by what Philip termed a 'march-past'. By examining the relatives and friends of a victim, he hoped to discover both the source of infection, who would then be isolated or taught to control his disease, and incipient cases, who would be sent to a sanatorium to recover. Philip's second idea was that all tuberculous patients and their families needed to be kept under constant medical and social supervision. To this end, a Directory of Tuberculosis was to be maintained and supervision undertaken by lady health visitors.

The dispensary, therefore, formed the hub of the 'Edinburgh Scheme'. After 1907, when notification was made compulsory in Edinburgh, suspect cases were referred to the dispensary by the M.O.H.. Patients were then screened and registered, while their families, friends and home environment were scrutinised. 'Early' cases were to be sent to the Royal Victoria Hospital at Craigleith, which had been expanded between 1903 and 1907 to accommodate 100 patients. 'Advanced' cases were to be sent to the City Fever Hospital at Colinton, where fifty beds had been set aside following an arrangement with the Corporation in 1906.¹² Finally, a Farm Colony was opened

12 In 1910 Edinburgh Corporation voted £450 p.a. to the Victoria Dispensary and £500 p.a. for the use of ten beds at Craigleith in order to discharge its duties under the Public Health Act. Transactions of the Edinburgh Meeting and Conference on Tuberculosis (N.A.P.T.) (Edinburgh 1910). p.156.

in 1910 for the treatment of ambulant infectious cases who had responded to treatment at the sanatorium.

Fig. 2(i) THE EDINBURGH SCHEME¹³



Philip's dispensary was unorthodox in that its primary functions were not to treat or dispense, but to register and screen consumptives. Free medicine was offered, generally cod-liver oil or malt extracts, but only as a bribe to encourage attendance. It certainly seemed to work. Between 1887 and 1913, 25,000 individual patients passed through the dispensary; an average of over 900 per annum.¹⁴ The scheme might also have been popularised by the fact that the name 'dispensary' had a long association with free medical treatment for the poor. Ironically, the old philanthropic dispensaries were decimated by the 1911 Insurance Act, while tuberculosis dispensaries were encouraged to proliferate.¹⁵

¹³ 'The Edinburgh Tuberculosis Scheme 1887-1937.', E.M.J. 1937. pp. 285-297.

¹⁴ T.N. Kelynack (ed), Tuberculosis Yearbook and Sanatorium Annual Vol.1. 1913-14. (1914) p.188.

¹⁵ O. Checkland, Philanthropy in Victorian Scotland. (Edinburgh 1980) pp. 200-208.

Philip's advocacy of the dispensary-based scheme was initially slow to develop elsewhere, but the movement began to gather pace at the turn of the century, when the disease was attracting increasing public attention. William Quarrier opened a dispensary in Glasgow in 1898 to act as screening point for his sanatoria at Bridge of Weir. The West of Scotland branch of the N.A.P.T. also opened a dispensary in Glasgow City Chambers in 1906. The same year Dundee opened the country's first municipal tuberculosis dispensary at the out-patient department of the Royal Infirmary.¹⁶ Three years later, Edith McGaw (later to become the second Lady Philip) established the first dispensary in England at Paddington in London. A Tuberculin Dispensary League was formed in London in 1909, but, as will be seen, this movement differed from Philip's as these dispensaries were principally concerned with treatment. Philip's ideas were also taken up abroad. Albert Calmette (of B.C.G. fame) founded the first dispensary in France, at Lille, in 1900. Another fifty were to be opened in France within five years.¹⁷ The French dispensaries also differed from the Edinburgh model in that they offered patients material help in the form of food and clothing.¹⁸ The first dispensary in Germany was opened in 1904, followed by a further 600 within nine years.¹⁹ Dispensaries were also founded in the U.S.A. in 1904 and in Canada in 1908.

16 Public Health June 1910. p.340.

17 E.M.J. 1937. op cit. p.290. For further details on B.C.G., see Chapter Five.

18 Glasgow Herald Sept. 6th 1911. p.10.

19 Bryder, Mountain. op cit. p.34.

At the International Congress of Tuberculosis in Paris in 1905, Philip called for public health local authorities to include the disease as 'a separate and well defined department of the M.O.H.'s activity'.²⁰ The following year, the Local Government Board (Scotland) issued a Circular on the Administrative Control of Pulmonary Phthisis, clarifying that pulmonary tuberculosis was now considered to be an infectious disease within the meaning of the Public Health (Scotland) Act 1897. As such, administrative control of the disease lay in future with the local public health authority. The Circular contained a paper written by Philip which recommended that the 'Edinburgh Scheme' be adopted by all local authorities. Philip engineered an even greater coup in 1911 when he persuaded the Astor Committee, set up by Lloyd-George to determine the best method of administering sanatorium benefit, to recommend that the Edinburgh Scheme be implemented nationally.²¹ Although greater emphasis was subsequently placed on the sanatorium than on the dispensary and, hence, on cure rather than on prevention, Philip's influence on the state's campaign against tuberculosis was immense. In 1913 Philip received a Knighthood from George V.

The Royal Victoria Hospital Trust gifted the dispensary, sanatorium and farm colony, valued at

20 E.M.J. Jan. 1906 (1). p.8.

21 While the Insurance Bill was before Parliament, Halliday Sutherland encouraged thirty-two pupils and friends of Philip to produce a volume of essays lauding the dispensary and its creator. A copy was presented to Asquith's wife. H. Williams Masters of Medicine (1954) p.278.

£62,000, to Edinburgh Corporation in 1916. Philip was to be retained as medical advisor. The following year the Trust endowed a Chair of Tuberculosis at Edinburgh University with £18,000 and Philip was appointed the first Professor of Tuberculosis in Great Britain. His course, consisting of thirty lectures, was heavily subscribed. From this position he was able to impose his ideas and authority on the next generation of tuberculosis specialists.

Many of our leading teachers and thinkers today have been taught by him or fallen under his influence and Sir Robert's writings and work are known to everyone.²²

When sanatorium insurance was scrapped in 1921 and local authorities were made solely responsible for the treatment of tuberculosis, Edinburgh Corporation dispensed with Philip's services and recruited a full-time Medical Director. This move caused much bitterness among the Edinburgh medical establishment. Philip, however, was given further opportunity to exercise his formidable clinical skills when the R.V.H. Trust opened an independent sanatorium at Southfield in 1922 to serve as a 'live clinical museum for research and study.'²³

Towards the end of his long career Philip became the elder statesman of the anti-tuberculosis movement. He was elected President of the B.M.A. in 1927, was five times President of the Edinburgh Royal College of Physicians

22 Obituary, Public Health, op. cit. p.164.

23 R.Y. Keers, Pulmonary Tuberculosis : a Journey Down the Centuries. (1978). p.131. For an assessment of Philip as a clinician, see, C. Clayson, Sir Robert Philip and the Conquest of Tuberculosis. (Edinburgh 1958.)

and was President of the N.A.P.T. from 1932. He continued lecturing on tuberculosis until his death in 1939 at the age of eighty-one. Thus Philip did not live to see the interruption of the downward trend in tuberculosis mortality in Scotland, a trend which he and others claimed the 'Edinburgh Scheme' had done much to bring about.

Philip was, by all accounts, a rather pompous character. Described by a contemporary as, 'dominating, actorish, manipulative...with a huge ego', Philip was a man who liked to get his own way.²⁴ He was criticised for behaving, 'as though tuberculosis were his own invention.'²⁵ Given both his influence and prestige and the controversies surrounding the treatment of the disease, it is hardly surprising that Philip attracted criticism. It must also be said, however, that he had many loyal friends, particularly among former students. 'If one at this late date may venture a criticism of him,' wrote Charles Cameron, his successor to the Chair

24 F.B. Smith, Retreat, op cit. p.201.

25 Williams, Masters op cit. p.279.

at Edinburgh,

it is that he was sometimes a little intolerant of views which ran counter to his own, and he liked those whom he invited to speak to agree with him; but when he differed he did so with courtesy.²⁶

Harley Williams, another former student, ascribed

Philip's success to the fact that,

people were willing to respect a man who claimed to have solved the ancient riddle of tuberculosis...He liked to carry out his social ideas through admiring laymen who would deferentially forward them without needing to comprehend.²⁷

As will be seen, this was how Philip came to dominate both the Astor Committee and the N.A.P.T.. Great claims had been made on behalf of the Edinburgh Scheme by Philip's acolytes:

During the second decade of the Victoria Dispensary's activities in Edinburgh, the death-rate from consumption in that city fell 42 per cent as compared with a fall of 17.65 per cent during the same ten years in London. And also that during the same period the death-rate fell more rapidly than in any of the other large towns of Scotland.²⁸

It is not clear where these statistics came from. The decline in the death-rate in Edinburgh in the decade 1895-1905 was, in fact, 25.7 per cent. In Glasgow, the absence of Philip's scheme did not prevent the rate declining by 25.5 per cent.²⁹ It will also be seen, in the sections describing the treatment of tuberculosis in

26 H. Williams (ed), Robert W. Philip - Memories of his Friends and Pupils. (N.A.P.T. 1957).

27 Williams, Masters op cit. p.279.

28 D.J. Williamson, (M.O. Paddington Dispensary), Public Health Feb. 1911. p.191.

29 Registrar General's Annual Reports Scotland. These figures are derived from three-year averages based around the years 1895 and 1905.

the interwar years, that Philip's opinions carried a great deal of weight in the many debates questioning the efficacy of putative remedies. He was, at one time or another, in favour of zomotherapy (the use of raw meat, or the juice extracted from it, in the treatment of tuberculosis), tuberculin, graduated exercise and, of course, open-air therapy, while he was against collapse therapy, pasteurisation and B.C.G..

As the founder of the Edinburgh Scheme, Philip will always be remembered as a pioneer of community medicine. He was prepared to aid the tuberculous when few others would dare. 'Like Lister, he became early dominated by an idea to which he adhered throughout his professional life.'³⁰ He synthesised the ideas of Boddington, Brehmer, Trudeau and Koch and developed a social scheme which he believed could tackle the immense problem of tuberculosis. Unfortunately, as will be seen, his idea was seventy years ahead of its time. It will be argued that Philip's scheme could not possibly work until reliable methods of readily detecting incipient disease were developed and, above all, until there was a cure for tuberculosis. When these came in the 1950's, with mass miniature radiography and effective chemotherapy, Philip's scheme worked. During the intervening seventy years, however, it proved wholly ineffective. Not only did it contribute little or nothing to the decline in mortality, but it also diverted resources and attention

30 Obituary, E.M.J., March 1939. p.180.

away from the more radical prescriptions to the problem of tuberculosis which a public health crusade may have demanded.³¹

3. THE POOR-LAW, POVERTY AND TUBERCULOSIS

a) The Contribution of Poor Law Institutions to the Decline in Respiratory Tuberculosis Mortality

Their continuing service since the 1840's might well make the Poor Law institutions a major contributor to the retreat (of tuberculosis).³²

This recent, unsubstantiated statement by F.B. Smith probably owed much to the original proponent of the theory, Arthur Newsholme. Following an international comparison of tuberculosis mortality rates with levels of pauperism, standards of living, overcrowding and the provision of institutional treatment in 1906, **Newsholme** concluded that the latter,

must be regarded as having exerted a more powerful influence on the prevention of phthisis than any of the other factors of which none has varied constantly with the phthisis death-rate.³³

L.G. Wilson has also adopted Newsholme's arguments to criticise McKeown's theory that tuberculosis mortality declined spontaneously in England and Wales without any significant contribution from the public health movement.

31 For the N.A.P.T.'s role in this distraction, see Bryder, Mountain, op cit. p.19.

32 F.B. Smith, Retreat op cit. p.239.

33 Newsholme, 'Inquiry into reduction in death-rate from phthisis' Journal of Hygiene. (6) 1906. op cit p.369.

McKeown misstated, or possibly failed to understand, one of the chief points that Arthur Newsholme demonstrated with brilliant clarity....that the effect of placing consumptive patients in workhouses or in Poor Law infirmaries was to separate them from the general populace and to restrict the spread of their tuberculosis to others....McKeown did not examine Newsholme's detailed - nay, exhaustive - study of the factors which had brought about the historical decline of tuberculosis.³⁴

The Scottish Poor Law system had always relied less on indoor relief than was the case in England and Wales. Thus in 1906 only fourteen per cent of Scotland's pauper population received indoor relief. At the same time the figure for England and Wales was thirty-two per cent.³⁵ Despite this disparity, Newsholme claimed that institutional provision had also led to the decline in mortality in Scotland. If Wilson is correct, however, the higher rates of mortality prevailing in Scotland may have been caused by the practice of providing less indoor relief for paupers.

Notwithstanding the argument that, given the universality of infection, any attempt at segregation was doomed to failure, it will be demonstrated here that in Scotland as a whole, and in Glasgow in particular, where parochial provision of tuberculosis beds was greatest, such institutions could not have played a minor, let alone principal role in the rapid decline of respiratory tuberculosis after 1870. As has been noted, the greatest decline in respiratory tuberculosis mortality occurred in

34 Wilson, 'Decline of tuberculosis.' Journal of the History of Medicine. 1990. op cit. pp.372-3.

35 M.A. Crowther, 'Poverty, Health and Welfare.' in Fraser and Morris (eds), People and Society in Scotland Vol.2. 1830-1914. (Glasgow 1989). p.275.

Scotland and in Glasgow between 1870 and 1900. Although the disease had been treated in the poorhouses since at least the 1860's, the great expansion of parochial tuberculosis bed provision did not occur in Glasgow until the beginning of the twentieth century with the opening of Stobhill and the Eastern and Western District hospitals. Chronologically, therefore, the parochial institutions could not have played the major role in the retreat of tuberculosis which has been accorded to them. Moreover, as will be seen in Chapter Four, the greatest drop in respiratory tuberculosis mortality during this period was experienced by women, who were discriminated against by the Poor Laws.

The most important diseases treated in the City Poorhouse of Glasgow in 1868,

both in point of view of numbers and severity were diseases of the chest including pneumonia, bronchitis and phthisis.³⁶

Although there are no available statistics for numbers treated in the earlier period, by 1910, the first year of compulsory notification in Glasgow, it was reported that thirty-seven per cent of primary notifications were Poor Law cases, while forty-six per cent of all cases ultimately found parochial relief.³⁷ Between 1904 and 1910 almost 6,000 tuberculosis cases were admitted to parochial institutions in Scotland, a third of whom died in hospital. It was claimed that this served as an

³⁶ Dr Robertson, Medical Officer City Poorhouse. Quoted in C. Pennington, 'Tuberculosis' in O. Checkland and M. Lamb (eds), Health Care as Social History : The Glasgow Case. (Aberdeen 1982) p.94.

³⁷ MOH Report Glasgow 1912. p.200.

exemplification of the potential amount of segregation of the advanced type of case during these years.³⁸

Such evidence would seem to support Smith's and Wilson's contention that the parochial institutions may have played an important isolationary role.

The drift of the tuberculous poor towards the Poor Law institutions, however, was largely a phenomenon of the early twentieth century. In 1899, Mr Barclay, General Superintendent of Poorhouses, was asked by the L.G.B. (Scotland) to conduct an investigation into the treatment of tuberculosis in poorhouses. Barclay found that only 1,239 cases of pulmonary phthisis had been treated in the country's poorhouses in the course of the year, representing about six per cent of all sick inmates.³⁹ At the time there were over 6,800 deaths per annum from respiratory tuberculosis in Scotland. Assuming that about a half of all cases treated died in the poorhouses, approximately ten per cent of all respiratory tuberculosis mortality in Scotland occurred in poor law institutions. This does not point to their playing a major role in the retreat of the disease. Barclay was,

surprised at the small number of (tuberculosis) cases reported to have been treated in poorhouses in a year. I expected the number would have been much larger, considering the feeble and suffering class of the population from which the inmates are normally drawn, and also from the fact that these cases are not retained in general hospitals and infirmaries.

38 E. Watt, (Dept. of Health for Scotland), British Journal of Tuberculosis (B.J.T.B.). 1937. p.188.

39 Fifth Annual Report L.G.B. (Scotland) 1900. [Cd 182]. Appendix p.35.

The period 1880-1910 saw phthisis displaced from the voluntary hospitals. During the quinquennium 1880-4 the number of cases admitted to the Royal and Western infirmaries averaged 604 per annum, and constituted fifteen and sixteen per cent respectively of their medical admissions.⁴⁰ By 1890-4, after the opening of the Victoria Infirmary, the numbers treated in the voluntary hospitals had dropped to 423. In 1907 phthisical admissions accounted for a mere three per cent of all admissions. Respiratory tuberculosis was being excluded partly because it was perceived to be an incurable disease and the hospital authorities did not want their performance ratios distorted. A more powerful factor, after all phthisis had always been incurable, was, perhaps, fear of cross infection once Koch had discovered the bacillus. Thus the modest expansion of Poor Law provision for the tuberculous before 1900 could have done little more than compensate for the beds lost from the general hospitals.

In 1909 it was reported that,

ten years ago, Poor Law Authorities had made little provision for the isolation of paupers suffering from phthisis. At the present time nearly every poorhouse in Scotland makes some accommodation for segregation.⁴¹

Such provision, however, could not have been very extensive outside the major cities. The following year it was reported that of the 878 cases of phthisis currently being treated in the Scottish poorhouses, no fewer than

40 M.O.H. Report Glasgow 1911. p.88.

41 Report on Scotland. Royal Commission on the Poor-Laws and Relief of Distress. 1909. [Cd 4922]. p.159.

620 were in Glasgow with a further 100 in Edinburgh.⁴² Therefore, if the parochial institutions did positively influence the rapid downward shift in tuberculosis mortality, they could only have done so in the two major cities. Smith and Wilson, however, may still have a case, because, as will be seen in Chapter Four, mortality declined much faster in Glasgow during this period than in the country as a whole.

In Govan in 1893, there were only sixty-six cases of phthisis under treatment in the Poorhouse infirmary, representing five per cent of all cases. In 1906 the number of such cases rose to 350, representing fourteen per cent of all cases. By 1910 they were accounting for twenty-five per cent of all cases.⁴³ Between 1893 and 1898, an average of 8,000 persons were admitted per annum to the Glasgow City Poorhouse, of which 4,500 were hospital cases. On average, 640 hospital cases died, eighty within three days of admission. Twenty-six per cent of all those who died had phthisis.⁴⁴ On average, therefore, only 160 phthisical deaths occurred per annum in the City Poorhouse, of which twenty probably occurred within three days of admission. At the time the average mortality from respiratory tuberculosis in the city was

42 W. Leslie McKenzie, Transactions N.A.P.T. Edinburgh 1910 op cit. p.70. McKenzie was appointed as the first full-time Medical Inspector at the Scottish L.G.B. in 1904. For his impact at the Board, see Levitt, Poverty op cit pp.46-49.

43 Dr W.J. Richard, Report of the Royal Commission on the Poor-Laws and Relief of Distress 1909 Appendix Vol. XI. Written and Oral Evidence. [Cd 4978] p.792.

44 Dr J. Johnston (M.O. Town's Hospital Glasgow), 'State provision for the care of the destitute sick.' G.M.J. May 1900. No. V. p.370.

about 2,000 persons per annum. Before the building of the new parochial institutions at the start of the twentieth century, the isolation provided by the Poor Laws must have been negligible.⁴⁵

Following the amalgamation of the City and Barony Parishes in 1898, plans were drawn up to erect purpose-built hospitals for sick paupers. It was hoped that these new institutions would attract a 'better class of pauper than had been the case hitherto.'⁴⁶ Three pavilions were erected at the model hospital at Stobhill specifically for the treatment of phthisis; two for males and one for females, each accommodating sixty patients. In addition, twenty two-bed shelters were provided for males and ten for females. There was thus accommodation for 240 phthisical patients at Stobhill following its completion in 1904. This proved to be insufficient and phthisis had to be treated at the newly erected Eastern and Western District Hospitals as well as in the old Poor-House at Barnhill. The total number of phthisical admissions to the Glasgow Parish hospitals between 1904 and 1910 were as follows:

45 For further critical analysis of the parochial hospitals' role in the retreat of respiratory tuberculosis, see C. Pennington, 'Mortality and medical care in Nineteenth Century Glasgow', Medical History 1979. 23. pp.442-450.

46 Dr J. Johnston, Reports on Poor-Laws 1909 - Appendix op cit. [Cd 4978] p.328.

Fig. 2(ii) Tuberculosis Cases Admitted to Glasgow Poor Law Infirmaries 1904-1910⁴⁷

	<u>MALE</u>	<u>FEMALE</u>	
<u>TOTAL</u>			
STOBHILL	2190	1130	3320
BARNHILL	2158	915	3073
EASTERN DISTRICT	342	182	524
WESTERN DISTRICT	<u>368</u>	<u>216</u>	<u>784</u>
	5058	2443	7501

In addition the Parish of Govan had provided separate accommodation for 148 phthisical patients at Merryflats Poorhouse from 1901. It was, therefore, only from the turn of the century, by which time phthisis had been all but driven from the voluntary hospitals and when the disease was attracting increasing public, medical and political attention that serious efforts were made to isolate cases in Glasgow's parochial hospitals. This effort, however, was to prove totally inadequate as the Poor Laws were not drafted with the treatment, let alone prevention, of tuberculosis in mind.

Of all cases admitted to Stobhill between 1904 and 1910, no fewer than forty-seven per cent discharged themselves at their own request. Thirty-six per cent died in hospital, while only seven per cent were discharged 'relieved'. The majority of cases admitted to the parochial hospitals were advanced, infectious cases. The fact that nearly a half of all patients in a model institution such as Stobhill left at their own request

⁴⁷ Glasgow Herald Nov.17th 1911. p.7.

further undermines the isolationary role claimed for such treatment, even after 1900. In Barnhill few cases stayed long enough to die. Fully seventy-four per cent of all admissions between 1904-1910 left at their own request, the majority, over eighty per cent, left within three months. Only thirteen per cent of admissions died in hospital. Just over one per cent were discharged 'relieved'.

In his evidence to the Royal Commission on the Poor Laws, James Russell Motion, Inspector of Poor and Clerk to the Parish of Glasgow, reported that,

It is very distressing to find that with all the first class accommodation we have at Stobhill both men and women go out and in notwithstanding strong remonstrances with them to remain. They will not settle down and assist the medical staff in effecting a cure.

Dr D. Fraser of the Paisley Poorhouse complained that even when they did secure 'early' cases,

Our efforts are hindered by many of them being 'out and ins'. They go out when they are doing well without the slightest regard to their conditions or the advice given to them.⁴⁸

The very nature of Poor Law relief, therefore, does not suggest that parochial institutions could have played a significant part in accounting for the rapid demise of tuberculosis at this time. The itinerant nature of the institutions' population could even be used to reverse Wilson's premise. That is, non-tuberculous paupers may have contracted the disease in the institutions, where it was rife, and then left to infect the general populace.

48 17th Annual Report L.G.B. (Scotland) 1911 [Cd 6192]. Appendix A. p.7.

It has been shown that the parochial hospitals could not have been responsible for the rapid retreat of respiratory tuberculosis from the 1870's. In 1892, only nine per cent of the total deaths from phthisis in Scotland occurred in Poor Law institutions.⁴⁹ A fair proportion of these must have died within days of admission. Although by 1910 over twenty-six per cent of all deaths were reported from parochial institutions, the great decline in respiratory tuberculosis mortality had already taken place. In Scotland, fifty-three per cent of the overall decline in respiratory tuberculosis mortality between 1870 and the advent of effective chemotherapy in 1950 occurred during the thirty years 1870-1900 when parochial provision was at its lowest. In Glasgow the decline during the same period was fully seventy-eight per cent. Whatever was responsible for this remarkable decline, one can say with certainty that it was not the Poor Law institutions. On such evidence, Wilson's case against McKeown can only elicit the Scottish verdict of not proven.

49 A.K. Chalmers, Transactions N.A.P.T. Edinburgh 1910 op cit. p.100.

b) THE INADEQUACY OF THE POOR-LAW SYSTEM

The administrative exigencies of the Poor Laws made them a totally inadequate instrument with which to tackle the problem of respiratory tuberculosis, particularly with respect to segregation. The majority of victims forced to seek refuge in parochial institutions were not admitted until their condition was well advanced, many died within days of admission. Consequently, the institutions could not have prevented much infection. Under the Scottish Poor Law it was illegal to treat the dependants of an able-bodied man. Thus many women were legally disbarred from entering the parochial hospitals. In the early years of Stobhill hospital, the ratio of male to female patients suffering from respiratory tuberculosis was about 2:1. The stigma attached to Poor Law relief, coupled with the harsh conditions prevailing within many of the older institutions also militated against attracting working-class consumptives.

The most obvious weakness in leaving treatment in the hands of the Parish Councils was that they were bound by the Poor Laws. Only sick paupers could be treated; prevention and the treatment of non-paupers were strictly ultra vires. It was also illegal, under the Scottish Poor Laws, to relieve the dependants of an able-bodied man. Although the Parish Council of Glasgow was often generous in allowing treatment to the dependants of able-bodied men⁵⁰, the problem can be seen at a glance when

50 In his evidence to the 1910 Committee on the Poor-Laws and Relief of Distress, Ewan McPherson, legal member of the L.G.B. (Scotland), claimed that in about forty cases

considering the number of women treated in the Parish's parochial hospitals. Only thirty-two per cent of all cases treated for phthisis by the Glasgow Parish Council between 1904-1910 were female.

Another major flaw in leaving treatment in the province of the Poor Laws was that while the consumptive pauper might obtain institutional treatment, there was no such treatment available for the victim just above him in the social scale. In his 1910 report to the L.G.B. on the treatment of phthisis in Glasgow, Dr Dewar highlighted the case of one such patient,

...a steady, respectable fellow, a good workman, and a good husband and father. He had saved some money. With the supervention of phthisis his savings gradually vanished. It took years to gather, but only months to scatter them. With dismay he sees them diminish and disappear. There is no one, certainly no public body, to help. But, so soon as he is actually destitute his difficulties are at an end! (sic) Then, and not till then, will he find a place in a Poor Law hospital, and his wife and children will receive a reasonable, if not even a generous, allowance.⁵¹

The fate of such cases, where the 'provident' would seem to fare much worse than the 'improvident', completely undermined the prevailing ethos of self-help which the provisions of the Poor Laws were intended to foster.

per annum the Glasgow Parish Council took the law into its own hands and admitted the phthisical wives of able-bodied men to hospital. James Stewart of the Glasgow Distress Committee denied this, 'I can speak to the opposite being the case to my knowledge.' McPherson was probably correct. Stewart, as a socialist, would have been keen to depict the Poor Laws in the blackest colour possible.

51 Reports to the L.G.B. (Scotland) on the Administrative Control of Phthisis in Glasgow 1911 Strathclyde Regional Archives (S.R.A.). LP/125. p.174.

In terms of treatment the parochial hospitals were also handicapped by the Poor Law system. As they could treat legally only those too ill to work, by the time the patient was admitted he would be far beyond any remedial treatment. As has been noted, only 226 of the 2,558 cases admitted to Stobhill between 1902-1908 were discharged 'relieved', the proportion so discharged from Barnhill was minimal. By their nature the Poor Laws excluded 'treatable', early cases.

In this disease, more than in almost any other, early treatment is necessary. By the present Poor-Law system, early treatment is rarely possible.⁵²

To be fair, this was a complaint that was to recur until the 1950's. In the interwar period the local authority hospitals were not notably more successful in attracting early cases.

As was argued earlier, the parochial hospitals were also ineffective in terms of isolating the disease. The very fact that so many patients were admitted with advanced disease meant that they had been infectious in the community for a long time before they received any treatment. Many patients were also 'in-and-out' cases who left when tired of institutional life. As one witness to the 1904 Committee on Poor-Law Medical Relief commented,

the persistence in open-air treatment involves a certain amount of 'downright pluck' which is frequently wanting in poorhouse subjects.

What may have been wanting was downright gullibility. As has been noted, the great majority of phthisical cases in

⁵² W Leslie McKenzie, Reports on Poor-Laws 1909 - Appendix op cit. [Cd 4978] p.182.

Barnhill left within three months of admission. In 1910 it was reported that,

Stobhill is preferred to Merryflats and the latter to Barnhill. The dislike to Barnhill, where the discipline is necessarily somewhat strict, and the features of a hospital are not prominent, is not unnatural. I have heard that when it is a case of Merryflats or Barnhill, the knowing ones who have had experience of both live for a night or two in a South-Side lodging-house in order that they might be sent to the hostelry which provides the superior catering and accommodation.⁵³

Another major problem with the Poor Laws was the stigma associated with them. Baillie Alston complained to the Glasgow District Societies Committee for the Suppression of Tuberculosis that,

it was a notorious fact that the only tuberculous patients dealt with in hospitals were those that passed through the hands of the Parish Council. That was not fair to the decent, respectable working men and women in the community. They had no wish to be tainted with the pauperism which always attaches to Poor Law relief.⁵⁴

The same year, J.V. Wallace, District Medical Officer Govan Combination Parish, reported that,

I have seen many hopeless cases of consumption living in a family, often a large and young family, with very limited space, and more limited means, and a more depressing condition of social life it would be hard to meet. There is absolutely no provision for such cases except the poorhouse hospital, and there is so much prejudice and aversion to this institution, that the friends of the patient prefer that he should die at home.⁵⁵

There were many who called for the compulsory isolation of consumptive paupers.

53 Reports to L.G.B. on Glasgow 1911 op cit. p.179.

54 Glasgow Herald April 11 1910. p.4.

55 Reports on Poor-Laws 1909 - Appendix op cit. [Cd 4978]. p.332.

The advanced, and, of course, most infectious cases, again, especially those from overcrowded houses (a very numerous class) where there is often a wife and several little children, would be required to be detained till they died, to prevent them returning and spreading infection among their families. This would no doubt be felt to be a great hardship, but it is the only logical outcome if we are to keep infection from the healthy and not throw away public money and energy for a comparatively barren result.⁵⁶

Again, J.V. Wallace in 1910,

Advanced and incurable cases, as they are the most deadly centres of infection to the family and the community should have a retreat or sanatorium, where they could be persuaded - compelled if need be - to retire to husband and wife's taper at the close.

Such Shakespearean sentiments were shared by the Edinburgh Parish Council. So keen were they to fill their newly erected sanatorium at Craiglockhart that they withheld outdoor aliment from paupers who refused to enter. Forty-two such cases were refused aliment during 1902, a practice the L.G.B. found 'objectionable from every point of view.'⁵⁷

The problems of attracting and retaining tuberculous patients who lived in overcrowded conditions were to exercise authorities long after treatment had left the province of the Poor Laws. Given the legal constraints and the associated stigma, the parochial hospitals had their own particular shortcomings, but the difficulties imposed by the unwillingness to enforce compulsory isolation were to remain. The compulsory detention of the

⁵⁶ Dr. William Findlay, 'The consumptive poor - what to do for them : a plea for notification.' G.M.J. Feb. 1903. p.327.

⁵⁷ Report of the Departmental Committee Appointed by the L.G.B. Scotland into Poor-Law Medical Relief. 1904. Vol 1. [Cd 2008]. p.34. See also, Evidence [Cd 2022] p.85.

tuberculous would have been seen as a threat to civil liberties, particularly if the better off were excluded. More to the point, it would also have been impracticable and enormously expensive. In this respect, more than any other, respiratory tuberculosis was totally different from other infectious diseases. Some patients would have to have been isolated for years. The numbers involved would have been staggering. Even in the 1930's, by which time Glasgow had more tuberculosis beds per head of population than anywhere else in the country, seventy-five per cent of all notified cases were undergoing domiciliary treatment. Earlier, Sir William Gairdner, in a conversation referring to the detention of the tubercular poor as a subject for legislative enactment, was reported to have remarked that,

(I am) afraid the tubercular members of the community might outvote their healthy brethren if the question ever came to a division.⁵⁸

The Poor Laws were clearly unsuited for treating, let alone preventing, a chronic, long-term disease such as respiratory tuberculosis. In the first decade of this century, some specialist accommodation, principally confined to the two major cities, was provided for the treatment of consumptive poor. Even this limited provision of beds, however, imposed an unacceptable demand on an already overstretched poor rate. When it became clear that local authorities were to take over responsibility for treating the disease, parish councils

58 'Discussion on the provision for the treatment and relief of the tuberculous poor.' G.M.J. Feb. 1901. p. 40.

became reluctant to invest money in institutions which might soon be redundant. In 1907 W. Leslie Mckenzie expressed the hope that, with respect to tuberculosis,

Parish Councils soon will be relieved of the enormous burden cast upon them by the accidents of their legal position.

c) PAROCHIAL RELIEF

Prospective parochial patients had to apply for relief to the Inspector of Poor who would then dispatch an assistant to see them. Inquiries were made as to their circumstances, past history, record and settlement. If the case was suitable, the patient was given a line to present to the district medical officer. He, in turn, filled out a medical certificate. Armed with this and a written order from the inspector, the consumptive pauper presented himself for admission to hospital. Any person admitted to a parochial hospital became a pauper. If he had any money above five shillings on his possession, it was appropriated by the authorities to pay for his maintenance. Any relations in the direct line who were able to pay were also 'compelled to disburse.' In Glasgow, at least, the applicant need not have been exactly destitute, but his, 'wage earning power must be insufficient to support the person.'⁵⁹

⁵⁹ Dr J. Johnston, Reports on Poor-Law 1909 - Appendix op cit.[Cd 4978] p.327.

In the classification of outdoor poor adopted by the Glasgow Parish Council in 1906, the seventh and twelfth classes concerned phthisis. The seventh class - phthisical cases - were to be sent to Stobhill along with cases developing phthisis in Barnhill or the District hospitals. The twelfth class - men and women who had previously been to Stobhill more than twice - were to be sent to Barnhill. Patients were also sent to Barnhill if they did not have a 'satisfactory record.' The indoor poor had a 'colour of admission order' which ran as follows;

- GREEN - Unworthy to be sent to District hospitals, malingers of questionable character.
- BLUE - Aged and infirm with unsatisfactory records.
- PINK - Satisfactory.
- WHITE - Satisfactory.

The diet of patients in Stobhill was fairly liberal if monotonous and accounted for about half the total cost of treatment. (see Appendix One) Diet formed a major part of treatment and was supposed to be have been under the absolute direction of the medical officer of the poorhouse. It was reported that these special diets were the cause of much jealousy among other, non-phthisical patients. Special diets, therefore, 'constituted an additional reason for segregating such cases.'⁶⁰

The average weekly cost of treating a phthisical patient in Stobhill was 16/6d per head: in Barnhill 8/2d:

⁶⁰ Report of the Departmental Committee 1904. op cit. [Cd 2008] p.36.

in Eastern District 25/7d: and in the Western District 29/3d. The low cost in Barnhill was related to the poorer diet provided, but the wide variations in cost probably owed more to the fact that debt charges were included in the accounts. The annual cost of treating phthisis indoors for the Glasgow Parish council in 1910 was thus;

Stobhill	:	275 patients at 16/6d per head	£11,827
Barnhill	:	180 patients at 8/2d per head	£ 3,801
Eastern	:	30 patients at 25/7d per head	£ 2,003
Western	:	55 patients at 29/3d per head	£4,188

giving a total cost of £21,879 per annum. The total cost of treating all indoor poor in Glasgow in 1907 was £126,437.⁶¹ Respiratory tuberculosis was, therefore, responsible for about seventeen per cent of the cost of maintaining all indoor paupers. These calculations do not take into account the money spent on special provision at Gartloch and Woodilee Asylums for phthisical pauper lunatics.

Treatment in the parochial hospitals was far removed from the complete rest followed by graduated exercise recommended by the 'open-air' school.⁶² Elizabeth McVail noted at Merryflats that,

61 J.R. Motion, Reports on Poor-Law 1909 - Appendix op cit. [Cd 4978]. p.250.

62 Graduated labour, as a treatment for consumption, was developed by Marcus Paterson at Frimley in Surrey from 1905. He later attempted to justify his treatment in scientific terms by claiming that exercise promoted 'auto-inneculation' - a process whereby tuberculin was released into the bloodstream which, in turn, liberated anti-toxins capable of neutralising the disease. As Bryder points out, such medical tosh was merely a gloss to cover the more widely acceptable belief that working-class patients ought to work. Mountain pp. 55-60.

a good deal of difficulty seems to be experienced by the staff, as many patients are of the dissolute class and keep the place in a chronic state of disturbance. The root of the evil may be that they are idle.⁶³

Graduated labour was introduced for consumptive paupers at the Paisley Poorhouse in 1910 because it 'was of greatest value in treatment, not to speak of its moral value.' The move was, however, 'met with great resistance on the part of many patients who resented being made to work.'⁶⁴

The parish councils also allowed outdoor relief for some phthisical pauper families. In 1910 there were 471 cases in Scotland under outdoor supervision.⁶⁵ In Glasgow alimment was far from generous. In 1910 it was estimated that after deduction for rent, coal and gas, the amount of relief available for food in phthisical pauper families ranged from 1/8d to 3s per head per week.⁶⁶ Scales such as these prompted McVail's observation that, 'phthisis causes pauperism in one generation and is caused by pauperism in the next.'⁶⁷ In Edinburgh, as has been noted, no alimment was given to the victim or his family unless he entered the Poor Law infirmary. One case was cited in 1907 of a phthisical man, with a wife and four children, who was offered an alimment of 8/- per week for his family on condition he enter the poorhouse.⁶⁸

63 Reports to the L.G.B. on Glasgow 1911 op cit. p.40.

64 D.Fraser, 17th Annual Report L.G.B. (Scotland) 1911. Appendix A. [Cd 6192]. p.7.

65 W. Leslie McKenzie, Transactions N.A.P.T. Edinburgh 1910 op cit. p.70.

66 Glasgow Herald Nov. 19th 1911 p.8.

67 Public Health. August 1910. p.404.

68 Reports on Poor-Law 1909 - Appendix op cit. [Cd 4978]. p.120.

d) POVERTY AND TUBERCULOSIS

The extent to which respiratory tuberculosis was responsible for pauperism is impossible to quantify exactly. In 1907, W. Leslie McKenzie claimed that, 'phthisis contributes more to pauperism than any other disease.'⁶⁹ It will be argued that respiratory tuberculosis not only accounted for much incapacitating illness, but was also much more responsible for the widowhood of many wives with young dependants. It is equally impossible to separate cause and effect; that is, to what extent did poverty cause tuberculosis and vice versa. One of the major causes of family poverty is the death of the the principal wage-earner. In the late nineteenth century respiratory tuberculosis alone was responsible for almost a half of all male mortality age 20-35. As the prime killer of males in this age group, the bacillus must have been responsible for a great deal of young widowhood. By examining the plight of such families, and particularly the low levels of aliment awarded, it will be argued that although McVail's dictum was substantially correct, it did rather detract attention from the fact that poverty alone was the prime determinant of high respiratory tuberculosis mortality levels, irrespective of why the family was plunged into poverty.

Although adverse family circumstances ranked behind low pay and unemployment as a major cause of poverty,

⁶⁹ Reports on Poor-Law 1909 - Appendix op cit. [Cd 4978]. p.182.

Rowntree estimated that the death of the head of household accounted for about fifteen per cent of primary poverty in York in 1899, while the illness of the chief wage earner accounted for a further five per cent.⁷⁰ As can be seen from Fig. 2 (iii), respiratory tuberculosis was by far the greatest killer of males aged between twenty and forty in Scotland in 1889-90. The disease was responsible for forty-five per cent of all deaths of males aged twenty-five. At the time the majority of men married between the ages of twenty and twenty-five. It would, therefore, seem reasonable to assume that respiratory tuberculosis was responsible for the plight of about a half of all young widows with dependants. In England and Wales in 1907, widows with dependants comprised seventy-seven per cent of all able bodied females on the outdoor roll.⁷¹ Although there are no figures readily available for Scotland, the greater relief granted to widows north of the border would point to the percentage being higher.

Although Rowntree's definitions and results were far from representative of the national experience, if widowhood and sickness were responsible for about twenty per cent of all primary poverty, then respiratory tuberculosis, being responsible for just under one half of all young widowhood and chronic illness, may have

70 S. Rowntree, Poverty : A Study of Town Life. (1902). p.120.

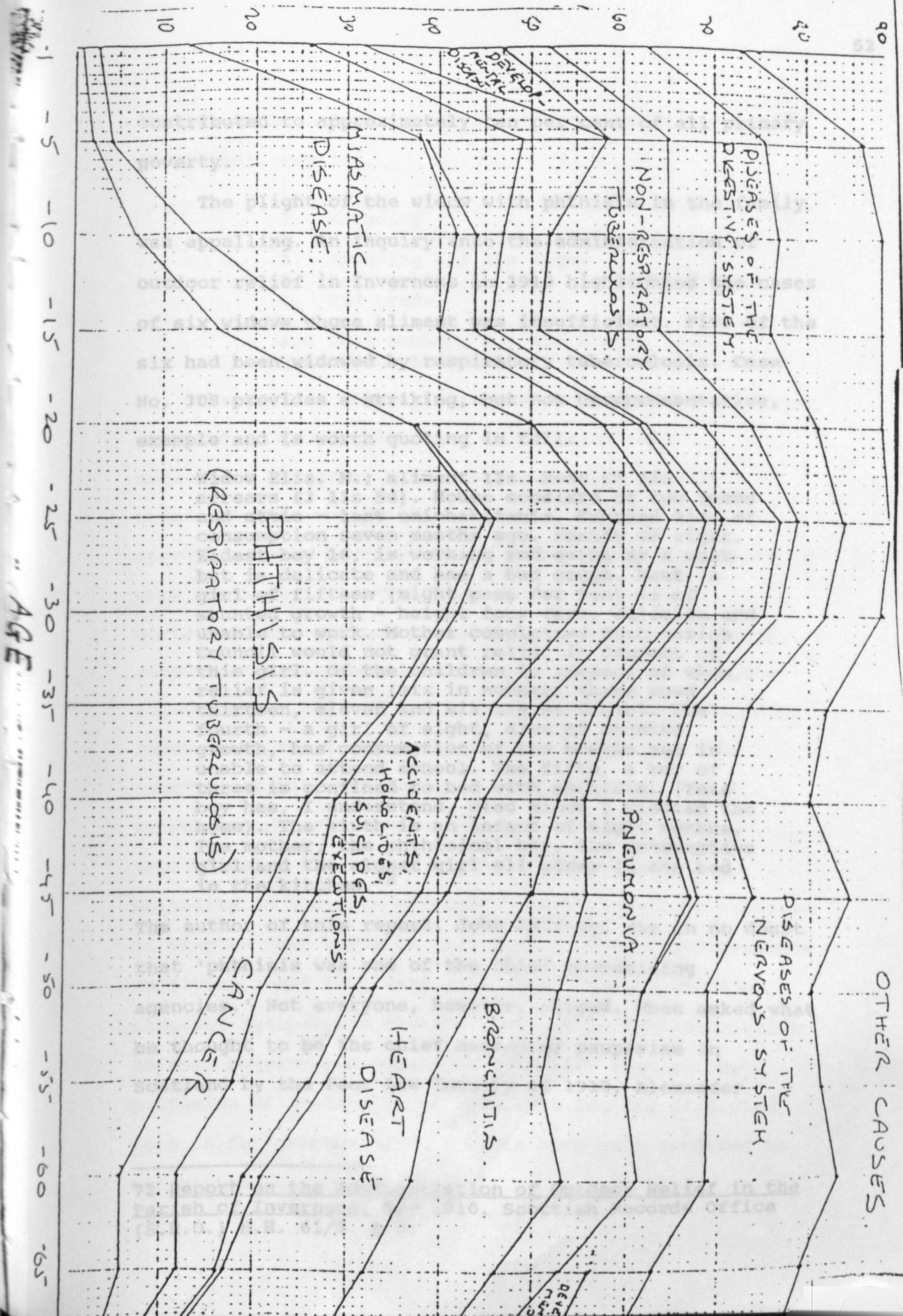
71 J. H. Treble, Urban Poverty in Britain 1830-1914. (1979). p.98.

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Fig. 2(iii). - Percentage male mortality by age and cause in Scotland, 1889-90.



contributed to approximately ten per cent of all primary poverty.

The plight of the widow with phthisis in the family was appalling. An inquiry into the administration of outdoor relief in Inverness in 1910 highlighted the cases of six widows whose aliment was insufficient. Five of the six had been widowed by respiratory tuberculosis. Case No. 308 provides a striking, but not unrepresentative, example and is worth quoting in full.

Widow Eliz. M.; aliment 12s. Rent £5 (in arrears £3 11s 5d). House consists of two rooms and attic - last uninhabitable. Husband died of consumption seven months ago. Family of eight. Eldest boy 16, is working and earns 5s a week but is delicate and has a bad cough. Next, a girl of fifteen (might pass for ten) is of stunted growth - height four feet, delicate and unable to work. Mother complained that Parish Council would not grant relief in respect of this girl. Of the children in respect of whom relief is given (six in number) three aged thirteen, eleven and six are at school. The fourth - a girl of eight, also of stunted growth, has consumption of the bowels and is unable to attend school. The fifth, a boy of three is confined to bed with phthisis. (This boy has, I understand, died since I visited the home). The sixth is an infant of eight months. The mother, the phthisical boy, the consumptive girl and the eldest girl all sleep in one bed in the kitchen.⁷²

The author of this report, John Jeffrey, was in no doubt that 'phthisis was one of the chief pauperising agencies.' Not everyone, however, agreed. When asked what he thought to be the chief causes of pauperism in Scotland by the Poor Law Inquiry of 1910, Alexander

72 Report on the Administration of Outdoor Relief in the Parish of Inverness. May 1910. Scottish Records Office (S.R.O.) H.H. 61/2. p.8.

Stuart, General Superintendent of the Poor at the L.G.B. (Scotland), replied,

1. Drink
2. Heredity
3. Early imprudent marriages
4. Spending all the wages
5. Bad health
6. Bad trade,

and that numbers 2,4 and 5 were in a great deal attributable to one.

The factors which predisposed to persons contracting respiratory tuberculosis are still imperfectly understood. However, there is a consensus amongst authorities in the field that the disease is closely associated with poverty. Exactly which aspects of poverty were the most influential in accounting for high mortality rates is not at point here. As has been said, respiratory tuberculosis may have been responsible for about ten per cent of all primary poverty, as defined by Rowntree at the turn of the century. What cannot be ascertained with any degree of certainty is to what extent was poverty responsible for respiratory tuberculosis. The causes of the great decline in mortality in the late nineteenth century will be examined in Chapter Four where it will be argued that improvements in living conditions were a critical factor. Had the campaign against the disease focussed on the association between poverty and tuberculosis rather than on the provision of institutional treatment for the afflicted poor, a far greater service would have been rendered to the victims of the disease.

4. CHARITY

While Poor Law institutions were finding it increasingly difficult to cope with the burgeoning demand from the tuberculous for beds at the turn of the century, their charity-financed counterparts were faring no better. All three charitable institutions in the West of Scotland, Bridge of Weir, Bellefield (near Lanark) and Lanfine (near Kirkintilloch), were described on the eve of the passing of the 1911 National Insurance Act as 'being in a state of bankruptcy more or less.'⁷³

As early as 1894 the renowned Glasgow philanthropist, William Quarrier, had announced his intention to erect Consumptive Homes on ground adjacent to his Children's Village at Bridge of Weir, Renfrewshire. It was estimated that £60,000 would be needed for the original scheme which envisaged five homes for 145 consumptives. Finance was to be raised, as it had been for the Children's Village, from unsolicited charity. Devoutly religious, Quarrier was confident that God would provide. Upon receiving over £8,500 within a year of launching his scheme Quarrier observed,

that such a large amount should be given without being called on, or collectors sent out to gather it, declares plainly that there is a God who hears and answers the prayers of his children.⁷⁴

The first home, The Door of Faith, was officially opened in September 1896, the first patient being admitted the following May. The home was to be a haven,

⁷³ Reports to L.G.B. on Glasgow 1911 op cit. p.167.

⁷⁴ William Quarrier, Narrative of Facts, (N.F.) 1895 p.60.

Where weary sufferers from disease throughout our native
land,
May find amidst these sylvan scenes an outstretched
helping hand,
To soothe and nurse, to tend and care, with aid from God
above,
Who looks with his all-seeing eye upon this work of love,
With richest blessings may He crown what he himself has
planned,
The Consumption Homes of Scotland - all glory to his
hand.⁷⁵

Initially only necessitous women were admitted to
Bridge of Weir 'as the number of the sex applying is much
larger.'⁷⁶ This would have been due to the tendency, as
noted earlier, of the Poor Laws to discriminate against
female admissions to parochial institutions. In the early
years treatment at Bridge of Weir was free of charge.
Despite early reports complaining that most applicants
had passed well beyond the first stage of the disease,
Quarrier was confident of 'fifty to seventy per cent of
cure.'

In 1899 the Homes were rechristened 'The Consumption
Sanatoria for Scotland', reflecting both the current
vogue for the name 'sanatoria' and the fact that patients
could apply from anywhere in the country. Most of the
money for the original scheme came from a few large
benefactors from the East coast. By 1900 Quarrier was
lamenting the state of affairs whereby,

75 Part of poem recited by little orphan girl to Lady
Coats at the opening thanksgiving service. N.F. 1896.

76 N.F. 1898.

Glasgow and the West of Scotland have not yet arisen to a sense of duty in this matter, although most of the patients come from the City.

A second sanatorium, The Door of Hope, was opened in 1900, again catering solely for women, while a third, for men, The Door of Charity, was not completed until 1907. A smaller home, built to accommodate twenty consumptive children, was opened the same year. Although Quarrier had announced plans to eventually accommodate 400 patients in 1900, there was to be no further addition to the sanatoria after 1907. There was, therefore, provision for 140 patients at Bridge of Weir; eighty women, forty men and twenty children. The scheme had to be scaled down when it became evident that the money coming in was barely enough to cover maintenance, let alone further capital costs.

Even before Quarrier's death in 1903 the sanatoria were in financial difficulties owing to the 'inadequacy of the funds being sent in for maintenance.' Earlier in the year Bridge of Weir had been forced to levy a charge of one pound a week on those patients who could afford it, although this was 'not much more than half the actual cost.' Beds had to be left vacant due to lack of funds.

At the present moment there are some vacant beds owing to lack of contributions and we wish those to whom God has given wealth could realise the need and lend a hand to help.⁷⁷

A crisis was averted the following year when Glasgow Corporation voted £1,000 per annum to the institution for a period of five years. By 1910 the cost of treating 423

77 N.F. 1903.

patients at the sanatoria was about £7,600; £2,424 of which was defrayed by payments from patients, £2,240 from donations, and the remaining £2,817 from legacies.⁷⁸ It struggled with this precarious, hand-to-mouth existence until 1913 when the National Insurance Committees became the main source of finance.

As noted, a West of Scotland branch of the N.A.P.T. had been founded in Glasgow at the turn of the century. Its main objects were disseminating anti-tuberculosis propaganda via lectures leaflets, posters and exhibitions. In 1901 it was decided to start work on a sanatorium near Lanark. Opened in 1904, Bellefield originally contained thirty beds. A further twenty-two beds were added in 1908. The beds were reserved for 'males from respectable artisan and commercial classes who cannot afford to pay for treatment.'⁷⁹ In addition the Association opened a dispensary in the Corporation's Sanitary Chambers to act as a screening point. Quarrier, too, had earlier opened a dispensary in 1898 to perform a similar service for Bridge of Weir.

Although the Corporation voted £5,500 to the upkeep of the sanatorium between 1901 and 1904, it was never a going concern. Until 1908 the annual deficit had been running at a manageable £300-400 per annum, but with the opening of the extension it rose to over £1,000. The average weekly cost per patient ranged from between 30-35/-, while their average contribution was only 8-10/-.

78 Reports to the L.G.B. on Glasgow 1911 op cit. p.167.

79 Glasgow Herald 21st Feb. 1911 p.11.

The remaining two-thirds of cost, about £2,600, had, therefore, to be met from charity. Relying on more mundane sources of funding than Quarrier, most of the money was raised by a Ladies Auxiliary; £11,000 in the period 1905-12.⁸⁰ Bellefield was notably less successful than Quarrier in attracting legacies, reflecting, perhaps, the latter's long association with worthy causes. The efforts of the Ladies Auxiliary were, however, never enough and it is clear that the institution was in serious financial difficulties when the Corporation bought it from the N.A.P.T. for £10,000 in 1914. Despite the great demand for places, only forty-two beds could be utilised in 1910 as the Association could not afford to subsidise the extra beds.

Lanfine Home for incurable consumptives was in the most critical financial state of the three. Like Bellefield, Lanfine had been extended from seventeen to forty-four beds after receiving a bequest in 1908. There was never enough money, however, to maintain the extra beds. As patients were treated free of charge, Lanfine depended solely on charity for its existence. In 1909 it was in debt to the tune of £1,400 and it was estimated that it would require an extra £3,000 per annum in order to fill all the beds.⁸¹

In addition, there were another six small charity sanatoria to serve rural Scotland; Seaforth Sanatorium in Kinross-shire, with twelve beds, the Anderson Sanatorium,

80 *ibid.* 14th Dec. 1912. p.6.

81 *ibid.* 21st Feb. 1911. p.11.

Hawick with ten beds, Hillside Homes, Perth with twenty-two beds, Dunblane, Perthshire with eight beds, the Argyll Sanatorium at Oban with twenty-two beds, and Aberchelder Sanatorium, near Inverness.⁸² Including Philip's Edinburgh Scheme, by 1912 charity had provided less than 400 beds in the whole of Scotland for the treatment of tuberculosis at a time when there were over 3,500 notifications of respiratory tuberculosis per annum from Glasgow alone. Financially, therefore, charitable institutions could no more cope with the vast problem of tuberculosis than could the parochial authorities.

Bryder claims that tuberculosis institutions attracted a good deal of charity, but with the exception of Seaforth, this does not appear to have been the case in Scotland.⁸³ A committee established in Aberdeen to raise funds for a sanatorium in 1902 had to be wound up within four years as the money was not forthcoming.⁸⁴ Such difficulties could not necessarily be blamed on tight fisted Aberdonians. Even William Quarrier found difficulty attracting sufficient funds after 1900. Lack of results may have been partly to blame. As will be seen below, Bridge of Weir cured few consumptives. In any event, tuberculosis, unlike orphans, was never likely to

82 Kelynack (ed), Tuberculosis Yearbook 1914 op cit. pp.291-300. T.Ferguson, Scottish Social Welfare 1864-1914. (Edinburgh 1958). p.431. The Seaforth Sanatorium had been luxuriously endowed by Colonel Stewart MacKenzie. The total cost of the institution was £10,000, working out at £555 per bed. A further £90,000 was donated for maintenance. Highlands and Islands Medical Services Committee Report Vol.ii. Minutes of Evidence. [Cd 6920] 1913. p.93.

83 Bryder, Mountain. op cit. p.30.

84 County M.O.H. Reports 1906 (1) (S.R.O.) HH62.

prove a magnet for charity. The gradual move towards some kind of state intervention may also have deterred would-be benefactors. In 1903, for example, a committee had been established in Dumfries to raise money for a sanatorium, but had decided to desist when it was pointed out, three years later, that responsibility for the treatment of tuberculosis now lay with the local authorities.⁸⁵ Bridge of Weir's income for the period 1901-13 was as follows;

Fig. 2. (iv) Charitable Income - Bridge of Weir 1901-13.

1901	£9,273	1905	£7,776	1909	£7,089
1902	6,152	1906	6,725	1910	7,678
1903	3,866	1907	6,567	1911	5,501
1904	10,937	1908	9,667	1912	4,867
				1913	9,642

As one would expect from an institution relying heavily on bequests, income tended to fluctuate. There is, however, a distinct downward trend after 1910, which only ceases when National Insurance becomes the major source of income in 1913. Although the move towards state intervention may have handicapped fund-raising in the years prior to 1911, it is clear that charity could not even begin to tackle the huge financial task of providing the tuberculous with institutional treatment. They could barely maintain the few beds provided for a tiny minority of the working-class suffering from tuberculosis.

In terms of treatment the charity institutions possessed one distinct advantage over the parochial authorities. Whereas, by their nature, the Poor Laws

⁸⁵ C. Clayson, 'Tuberculosis' in McLachlan (ed), Improving the Common Weal. (Edinburgh 1987) p.388.

excluded 'early' cases, the charitable institutions, with the exception of Lanfine, were able to be more selective in their admissions policy. In this respect the experience of Bridge of Weir prior to 1911 is particularly instructive, as by then it had already encountered all the problems which were to plague the anti-tuberculosis movement until the 1950's.

The earliest treatment administered at Bridge of Weir involved steam inhalation and the taking of frequent Turkish baths. However, this was discontinued after only nine months in favour of the 'Nordrach' treatment, which was becoming all the rage in tuberculosis circles. Pioneered by Otto Walther from 1888 at Nordrach-in-Baden in the Black Forest, the treatment consisted of rest, plenty of fresh-air and, above all, forced feeding. In his Narrative of Facts for 1899 Quarrier describes the new treatment thus;

The patients usually reach us with the temperature varying from 100-103 degrees, and on arrival they are sent to bed until the temperature gets normal, the windows and doors of bedrooms being kept open night and day. During their stay in bed they must eat large quantities of food and drink quantities of sweet milk. After the temperature has reached its normal state, as shown on the charts marked daily, the patient is allowed to rise and go out, the doctor regulating the length of walking exercise to be taken. The patients are not allowed to walk out in large numbers, but alone or with one companion, so as to avoid excitement in talking. The rising hour is seven o'clock, and after bathing, dressing etc., breakfast is served at eight, consisting of ham and eggs, fish or other meats, with a good supply of bread and plenty of butter, a pint of warm milk, and finishing with a cup of tea, if desired. After breakfast and examination by the doctor, they walk out in all weathers,

returning to the house at twelve o'clock to rest for an hour before lunch at one. This meal consists of roast beef, mutton, tongue or other meat, amounting to half a pound after being cooked, to each patient, with potatoes and other vegetables and followed by a good supply of pudding. A pint of sweet milk is also taken with this meal. If patients cannot eat there is little hope of recovery, and it is necessary on their part to exercise a good deal of will power, as well as supervision on the part of the doctors and nurses, to see this part of the treatment carried through. The doctor presides at meals, and insists that, even if they have to sit for two hours or more, the quantities prescribed must be partaken of...The afternoon is mostly occupied by short walks and rest in the open-air couches, or, when stormy, in the open-air shelters provided in the grounds. Rain does the patients no harm and they are out in all weathers. A mackintosh is not allowed to be used as it causes perspiration. ...After an hour's rest, dinner is served at seven, where, as at lunch, half a pound of meat, with potatoes and vegetables etc. must be disposed of by each patient, followed by a good supply of pudding, and finishing up with fruit and plenty of sweet milk. After dinner there is quiet rest, and all must be in bed by nine, with windows and doors open all night.⁸⁶

Under this regimen, the patients, all women at this time, were consuming almost 5,000 calories a day. Patients' progress was measured in terms of the amount of weight they put on. In 1900 it was proudly reported that the average weight gain per patient was 1 st. 10 lbs. Following advice from the sanatoria's Medical Advisory Board, food intake was drastically reduced in 1904. By lessening the amount of butcher meat in the diet, the calorie level was reduced to an average of 2,500. This change had the added bonus of reducing average weekly patient costs by a quarter.

86 N.F. 1901.

In spite of early reports that the results of treatment were 'most encouraging and satisfactory', Quarrier was soon disabused of his notion of effecting cure rates of fifty to seventy per cent.⁸⁷ From his own records it is clear that the only result of forced feeding was that patients required stouter coffins. In 1908 a resume was taken of seven years' experience of treatment. Of the 1,141 patients treated between 1901-7, forty-three per cent were untraced (presumed dead), thirty-two per cent were certainly dead, leaving only a quarter definitely living. The majority of 'well' patients were recent discharges. Only sixteen per cent of those treated in 1901-2 were definitely alive in 1907.⁸⁸ Such results accord with those experienced forty years later. The Medical Officer, John Guy, reported that,

the most probable reason for the great mortality is that the patients dealt with here are principally from the working-class, and when discharged return to conditions which, in the widest sense of the term, are not hygienic. The short duration of residence is another factor.

This was to become one of two stock excuses offered to explain the dire results of institutional treatment in the interwar years. The other was the problem of attracting 'suitable' patients.

In 1907, in view of the 'outstanding difficulty in procuring "early" cases', it was decided to reject all applicants 'too advanced to make betterness possible' and concentrate on 'cases in the early stage, for whom there

87 G.M.J. 1902. p.56.

88 N.F. 1908.

is some prospect of complete cure or betterness.' Average residence was also extended from four months in 1903 to five and a half months by 1907. In the following years new forms of treatment such as graduated exercise, tuberculin injections and the 'inhalation of volatile antiseptics' were also introduced in line with developments in other sanatoria. The new treatment and the decision to exclude advanced cases had no positive effect on cure rates, which in fact deteriorated. Between 1907-12, 1,892 patients passed through Bridge of Weir. By the latter date, forty-two per cent were untraced (presumed dead), thirty-seven per cent were dead and only twenty-one per cent were still alive.⁸⁹

In the light of such disappointing results, the curative aspects of treatment began to be understated. In 1906 it was reported that, 'results of the work are threefold - educative, remedial and curative.' The order is significant. In defence of the institution it was argued that,

89 N.F. 1913.

The good done is much greater than is apparent from any tables, for a large number of those discharged as improved have fully apprehended the rationale of the treatment and leave with the determination to follow it to the utmost, so that life is considerably prolonged, and the danger of infection of others is minimalised, if not entirely obviated because of the intelligent precautions of those who have been educated in the principles of the treatment at the sanatoria.

As will be seen, this was precisely the same argument which was used by the apologists of institutional treatment in the 1920's, when the curative powers of state sponsored sanatoria were again found wanting.

If the medical staff at Bridge of Weir were quick to discover the inadequacy of institutional treatment and to formulate excuses to justify their continuing existence, they were also aware as to where possible solutions to the problem might lie. More than half of all cases treated between 1901-3 were occupationally classed as either housewives or 'at home'. This prompted the Medical Officer to observe

that those who remain at home during the day are more liable to develop pulmonary tuberculosis than those who perforce have to earn their livelihood.

Although this observation is meaningless without figures to show the percentage of working females in the population, it does show that the medical staff were aware of the association between housing and tuberculosis. This is hardly surprising as A.K. Chalmers, who at the time was investigating such links, was a member of the Medical Advisory Board. 'No doubt for a prolonged period sanatoria will continue to be required

in this country,' wrote a rather disillusioned Dr. Guy in 1911,

but until the authorities clear out the slums in our cities and the miserable dwellings in many of the smaller towns and villages, little can be looked for in the way of progress towards the eradication of this disease.

5. PRIVATE SANATORIA

The owners of private sanatoria had, of course, an even greater incentive to defend the results obtained from open-air therapy. David Lawson, the enterprising Banchory physician who established the Grampian, Nordrach-on-Dee and Tor-Na-Dee sanatoria in the Highlands, claimed that German sanatoria were achieving eighty per cent cure rates. In an article entitled 'Consumptive Sanatoria: Are They Worthwhile', he further maintained that seventy-seven per cent of those treated were still capable of work eight years after discharge.⁹⁰

Lawson also stressed the educative role of sanatoria. Patients treated therein would become 'apostles of hygiene in the home and surroundings to which they return.' It is extremely unlikely, however, that any of Lawson's apostles ever returned home to a tenement flat. In 1912 Nordrach-on -Dee charged six guineas a week to patients, who came from 'all over the world.' Attracted by advertisements which stressed the

⁹⁰ G.M.J. March 1908. pp.161-178. At best, Lawson must have been using some very selective statistics. Bryder quotes Englemann's figures for the results of treatment in German sanatoria which point to over fifty per cent mortality four years after treatment. Mountain op cit. p.68.

proximity of Balmoral, a site recommended to Queen Victoria by 'three professors of medicine at Scottish universities as a most attractive location from the hygienic point of view', Lawson's disciples enjoyed access to three croquet lawns, a bowling green, rifle ranges, fishing, a putting green, a nine hole mashie course and a library stocked with 2,000 books.⁹¹ Such a retreat would have proved ideal for the wealthy hypochondriac. If this was the case, it might explain the high number of 'cures'.

Lawson opened the first private sanatorium in Scotland at Kingussie in 1898. The venture proved profitable and he was able to move into larger premises, the Grampian Sanatorium, in 1901. The same year he built the more select Nordrach-on Dee, which was expanded three times until in 1911 it catered for seventy patients. Lawson had a considerable investment in the open-air treatment of tuberculosis. In all, he spent £47,000 on the sanatorium, working out at £670 per bed. At the same time, pavilions were being erected at the Edinburgh City Hospital at a cost of £60 per bed. In 1918 he opened another sanatorium on Deeside, Tor-Na Dee, which could accommodate seventy 'officers of H.M. forces' for the price of £5 5/ a week.

91 B.J.T.B. 1911. p.307. Lawson appeared as 'Dr. Lennox' in Somerset Maugham's short story The Sanatorium, based on the author's experience as a patient at Nordrach-on-Dee. Maugham describes Lennox as 'a good enough doctor, an excellent business man and an enthusiastic fisherman.' Collected Short Stories Vol.2. (1951). p.912.

By 1912, Lawson's income from Nordrach-on-Dee alone was £23,000 per annum. Although his overheads must have been high, the staff consisted of three resident physicians, a matron, a masseuse and eight trained nurses, it is understandable why Lawson believed that consumption sanatoria were, indeed, worthwhile. Working through the N.A.P.T., such medical entrepreneurs had a strong vested interest in arguing for the curative powers of sanatoria.

6. LOCAL AUTHORITIES

Before 1906, when they were advised by the Scottish L.G.B. that it was their duty to treat and prevent the disease, local authorities' anti-tuberculosis measures had consisted mainly of attempting to police milk supplies. Glasgow was the first city in the country to obtain local powers for the control of milk as a medium in the spread of bovine tuberculosis under the Glasgow Police (Amendment) Act 1890. The L.G.B. (Scotland) issued a Dairies, Cowsheds and Milkshops Order in 1899 extending the meaning of disease, under an earlier Act of 1895, to include tuberculosis of the udder following the publication of two reports on tuberculosis in 1895 and 1898.⁹² Milk proved more difficult to regulate than meat, partly owing to sampling and diagnostic difficulties, but

⁹² Report of the Royal Commission to Enquire into the Effect of Food Derived from Tuberculous Animals on Human Health [C-7703]. 1895. Report of the Royal Commission on Procedures for Controlling Danger to Man Through the Use of Food of the Meat and Milk of Tuberculous Animals [C-8824]. 1898.

primarily because local police acts did not extend to outlying areas where the milk was often produced, while enforcement of the national legislation was patchy.⁹³ Nevertheless, by 1910 substantial progress was being reported. In 1904, 9.3 per cent of samples of country milk and 1.5 per cent of town milk was found to be infected with tubercle. Six years later only 1.8 per cent of country milk was infected while no samples of town milk contained bacilli.⁹⁴ In 1911, no positive samples were found in any milk in Glasgow, a 'striking progressive improvement' over the situation two years earlier when 5.1 per cent of samples taken from country herds had proved positive.⁹⁵

Local authorities were responsible for disinfecting houses in which a person suffering from tuberculosis had died. They were also active in disseminating anti-tuberculosis propaganda, notably in displaying 'do not spit' notices.⁹⁶ Lack of funds, however, prevented most authorities from doing very much more in discharging

93 C. Pennington, 'Tuberculosis' in Health Care op cit. pp.89-91.

94 Transactions N.A.P.T. Edinburgh 1910 op cit p.82.

95 Glasgow Corporation Health Committee (G.C.H.C.) Minutes 22nd Jan. 1913. S.R.A. C1/3/48. p.664.

96 Renfrew Burgh distributed a calendar beginning in 1905 entitled 'The Prevention of Consumption'. Amongst other admonitions was one advising young persons, especially girls, not to eat sweets between meals. It also warned that, 'household pets such as canaries and parrots, sometimes distribute infection right and left for months without arousing suspicion.' The calendar was basically a paean for fresh air. 'This disease would soon be exterminated if, in addition to the ordinary rules of healthy living, pure fresh air were breathed night and day'. B.J.T.B. 1908. p.81.

their duties towards the tuberculous. In 1907, the L.G.B. complained that

in no locality has the local authority adopted the special organisation necessary for the full administrative control of the disease.⁹⁷

As has been seen, Glasgow and Edinburgh co-operated with existing charitable institutions in an attempt to secure some beds for 'early' cases. In 1907, Glasgow conducted an experiment in isolating selected cases, mostly bed-ridden mothers from overcrowded homes, at a reception house. All were women who had been disbarred from parochial relief on account of being the wives of able-bodied breadwinners. One lesson learned was that patients with advanced disease did not always care for segregation. Eight of the twenty-seven cases treated chose to return home to die amongst friends and relatives.

Where charity institutions were unavailable, some progressive local authorities attempted to provide their own facilities. In Leith twelve beds were set aside for the treatment of respiratory tuberculosis in the town's isolation hospital in 1904. When these proved inadequate 'horse-drawn tramway cars were purchased and fitted up with beds like ships' bunks.'⁹⁸ In Lanarkshire tuberculosis pavilions were erected from 1905 in a number of infectious diseases hospitals scattered throughout the three Wards of the county. By 1911 there was

97 12th Annual Report L.G.B. (Scotland) 1907 [Cd 3470]

98 Public Health Feb. 1917. p.169.

accommodation for some 156 patients.⁹⁹ Kirkaldy was the first local authority to apply for permission to erect a municipal sanatorium in 1907, while several authorities in Ayrshire combined to purchase the New Cumnock Sanatorium from a local charity. On the eve of the passing of the Insurance Act, however, it was reported that local authorities in Scotland had provided only 480 beds for the treatment of respiratory tuberculosis, most of which were contained in the spare wards of isolation hospitals.¹⁰⁰

Lack of resources was the greatest constraint facing the local authorities. Smaller authorities, particularly in the Highlands and Islands where the rateable base was extremely low, found tackling the disease impossible. The M.O.H. for Caithness reported in 1906 that,

In this district, amongst the poorer classes, treatment at home is most unsatisfactory. Isolation is impossible, disinfection during the course of the disease is difficult to carry out, and instructions regarding precautions are neglected; and since there are no facilities for the hospital treatment of poor persons in any stage of the disease, and no immediate prospect of such, it is practically impossible for the local authority to develop any scheme calculated to control and deal effectively with pulmonary tuberculosis.¹⁰¹

It was not just the smaller authorities which faced such problems. In Glasgow treatment was still, for the most part, in the province of the Poor law. This led to an acrimonious dispute between the Parish councils and

99 18th Annual Report L.G.B. (Scotland) 1912 [Cd 6720] Appendix B. No.5.

100 6th Annual Report Scottish Board of Health 1924 [Cmd 2416] p.54.

101 County M.O.H. Reports 1906 (1) S.R.O. H.H. 62. p.6.

the Corporation. Once the latter had been made responsible for treatment and prevention, the Parish Councils were understandably anxious to be relieved of the burden of the tuberculous sick. After they threatened to take legal action to force the Corporation to take up its responsibilities, the L.G.B. (Scotland) hastily set up an Inquiry to report on the whole question of the administrative treatment of tuberculosis in Glasgow.¹⁰² The Report recommended that administrative control be the responsibility of one authority, the Corporation. The Parish Councils should only be responsible for the relief of dependants rendered destitute by the illness of the wage-earner. They further recommended that more institutional provision be made for the treatment of the disease in Glasgow.

This latter recommendation posed a dilemma for the Corporation. The City's progressive M.O.H., A.K. Chalmers, had long advocated that the Corporation accept sole responsibility for the treatment of phthisis. The Corporation had no resources, however, to spare. At a time when the rates in Glasgow had risen by thirty-six per cent in thirty years, and when the Public Health Local authority assessment was limited to one shilling in the pound, any increase in expenditure to meet the cost of treating tuberculosis was out of the question.¹⁰³ In 1911, Lloyd-George provided the funding whereby the

102 G.M.J. June 1910 p.195. Reports to the L.G.B. on Glasgow 1911 op cit.

103 Glasgow Herald 15th April 1911. p.9. D. Muir, Local Authorities and their Assessments (Glasgow 1908). S.R.A. PA 3/44.

Corporation and other local authorities could endeavour to meet their obligations under the Public Health (Scotland) Act 1897.

7. NOTIFICATION

When it had become accepted that tuberculosis was, indeed, an infectious disease, there were calls for it to be scheduled as such under the terms of the Infectious Disease (Notification) Act 1889. Philip, desiring to create a detailed Directory of Tuberculosis, called for the compulsory notification of the disease in Edinburgh as early as 1890. However, in 1898 the Public Health Committee advised that the time was not yet ripe for such a move. By then, Philip had changed his mind, 'neither medical nor public opinion was sufficiently informed to admit of notification yet.'¹⁰⁴

It was argued that the compulsory notification of respiratory tuberculosis would impose an intolerable burden on victims who it was feared might face social ostracism. It was also, more forcibly, argued that it was pointless demanding notification until such time as sufferers could be offered facilities for treatment.¹⁰⁵ Notification, as a step towards compulsory isolation, was ruled out as being totally impractical in view of the vast numbers involved. Voluntary notification, for its

104 H.P. Tait, A Doctor and Two Policemen (Edinburgh 1974) p.58.

105 35th Annual Report of the L.G.B. 1905-6. Supplement in Continuation of the Report of the Medical Officer on Sanatoria and Certain Other Aspects of the Tuberculosis Question. [Cd 3657 1907]. p.606.

part, was objected to on the grounds that it would be limited to the poor, as doctors would not risk losing income by breaching the confidence of their paying patients.¹⁰⁶

The L.G.B. (Scotland) stipulated in 1902 that it would not sanction voluntary notification until a local authority could demonstrate that it 'was prepared to use the information to the public advantage and could provide adequate resources to deal with the disease.'¹⁰⁷ Glasgow had introduced voluntary notification in 1899. Limited to the Poor-Law and charity dispensaries, the scheme 'was not attended with satisfactory results'.¹⁰⁸ Edinburgh became the first city in Britain to introduce universal voluntary notification in 1903. In 1906 the L.G.B. (Scotland) advised that a system of notification was now essential as respiratory tuberculosis was to be regarded as an infectious disease within the meaning of the Public Health (Scotland) Act 1897. The following year an Act was passed modifying certain sections of the 1897 Act as they applied to phthisis. Some local authorities felt that the conditions of the original Act had been too stringent, notably those regarding school attendance and exposure in public conveyances and, as such, had been reluctant to use their full powers.¹⁰⁹ This amendment encouraged the move towards compulsory notification.

106 A. Newsholme, The Prevention of Tuberculosis (1908) p.340.

107 8th Annual Report L.G.B. (Scotland) 1902. [Cd 1521] 1903. p.xxxv.

108 M.O.H. Report Glasgow 1904. p.95.

109 M.O.H. Report Glasgow 1906. pp.112-123.

Again Edinburgh was to the fore, introducing compulsory notification in 1907. By 1911, fifty-eight per cent of the country's population were so covered. The following year, the notification of respiratory tuberculosis was made compulsory throughout Scotland. In return for a fee of 2/6d, general practitioners had to inform the local M.O.H. of any cases they came in contact with inside forty-eight hours. All forms of the disease became notifiable in Scotland in 1914.

Although there is little evidence of victims suffering persecution as a direct result of notification, the new law did little to help. Patients might henceforth be classified, but they still could not be cured. Moreover, there is much evidence to support the view that the system was far from adequate. In 1924 it was reported that forty-five per cent of total tuberculosis mortality in Scotland occurred within three months of notification. As late as 1947, fifteen per cent of all respiratory deaths in Scotland were not notified while living, and a further seventeen per cent were only notified within three months of death.¹¹⁰ Notification did not, therefore fill sanatoria with early cases. Whether the failure was due to 'a certain professional perversity' on the part of doctors, to maladministration, or to the reluctance of patients to come forward it is agreed that 'notification

110 6th Annual Report Scottish Board of Health 1924. [Cmd 2415] p.61. Report of the Scottish Health Services Council's Committee on Tuberculosis. (Edinburgh 1951). p.34.

did not, as it had with other diseases, contribute greatly to the reduction of tuberculosis.'¹¹¹

8. WHY PUBLIC SANATORIA?

There were four main schools of thought concerning how best to tackle the problem of tuberculosis amongst the working-class: the eugenic school; the advocates of tuberculin dispensaries; the open-air, self-help school; and, the environmentalists.¹¹² The last two were not mutually exclusive, but there were those, particularly M.O.H.s, who argued that sanatoria placed too much emphasis on treatment, to the neglect of prevention.

The eugenic argument that tuberculosis was hereditary was not altogether refuted by Koch's discovery of the bacillus. It was now argued that, while the

111 C. Clayson, 'Tuberculosis' in Common Weal op cit. p.389. Smith, Retreat. op cit p.70. For the debate on why notification proved inadequate, see Chapter Three - Dispensaries.

112 Another possible contender was the 'Maggotorium' school, which advertised a 'simple and cheap cure for consumption.' Its progenitor, a consumptive Yorkshire collier, claimed to have recovered from the disease after inhaling fumes from his maggot hatchery. By 1911 he was putting 12,000 'pints' of maggots into circulation each week. So successful was he, that John Burns requested a special report on the subject for the L.G.B.. One Glasgow woman, who purchased the 'treatment' for her daughter, discovered that, not only did maggots fail to cure, but they also evolved into rather troublesome bluebottles. This particular dose was eventually dispatched into the River Clyde. Glasgow Herald 31st July 1911. p6. A. MacGregor, Public Health in Glasgow (Edinburgh 1976) p. 90. The Maggotorium episode is indicative of the desperate nature of the search for an answer to the problem of tuberculosis, even in the highest circles of government. For a droll account of the ubiquitous quack remedies for consumption, see F.B. Smith, 'Gullible's Travails : tuberculosis and quackery 1890-1930', Journal of Contemporary History 20. 1985.

disease itself was not hereditary, predisposition to infection was. The main proponent of this argument was Karl Pearson, Galton professor of Eugenics at the University of London.¹¹³ He argued for the existence of a tuberculous 'diathesis' on the grounds that the disease was more common in the children of the tuberculous than amongst the general population.¹¹⁴ He also noted that children were more likely to develop clinical disease if both parents had a history of the disease than if only one had. Given that tuberculosis is an infectious disease, it is almost impossible to separate the influence of environment from possible genetic factors. However, there are two convincing arguments against Pearson's claim; in general, some two thirds of all cases of respiratory tuberculosis had no family history of clinical disease, and that, of those who did contract the disease, those who had no family history fared no better than those who did.¹¹⁵ Today, 'it is now considered that the increasing chance of infection is by far the more important influence (in contracting clinical disease). In general, therefore, genetic factors are not of great importance.'¹¹⁶ Whatever the merits of the case at the time, the eugenic theory proved untouchable, both politically and medically. Given the public attention

113 K. Pearson, Studies in National Deterioration : A First Study of the Statistics of Pulmonary Tuberculosis. (1907).

114 This view was widely held at the time. See Appendix Three.

115 B.R. Clarke, Causes and Prevention of Tuberculosis. (Edinburgh 1952). p.88.

116 Crofton and Douglas, Respiratory Diseases op cit. p.233.

devoted to tuberculosis in the 1900's, Lloyd-George could hardly have stood up in Parliament to announce that no special provision would be made for consumptives in the National Insurance Act because he had been assured that they would all be dead in a generation or two. Had he done so, his ambulance wagon would have become his hearse. The medical profession, for its part, was not ready to embrace a theory of disease which allocated doctors a purely passive role. Bryder also claims that the role of predisposition was deliberately understated by the N.A.P.T. because they were far more concerned with reforming the habits of the poor.¹¹⁷ Be this as it may, so too were the eugenicists. Their proposed reforms, such as imposing marriage bans on consumptives, although more extreme, were not wholly different in kind.¹¹⁸ The N.A.P.T.'s rejection of eugenic theories is perhaps more readily explained by the fact that many of its members were either sanatorium owners or promoters.

As already noted, the Tuberculin Dispensary League had been established in London in 1909 as a means of, 'giving simple, direct, cheap and effective treatment to the huge majority inevitably rejected and neglected by sanatoria.'¹¹⁹ Three such dispensaries were established in Scotland at Inverness, Irvine and Leith.¹²⁰ Tuberculin had been developed by Koch in 1890 following the discovery of what has since become known as 'Koch's

117 Bryder, Mountain op cit. p.21.

118 For eugenic policies for consumptives, see Smith, Retreat op cit. p.39.

119 B.J.T.B. 1911. p.83.

120 B.J.T.B. 1912. p.152.

Phenomenon'. He observed that if a diluted dead culture of tubercle bacilli is injected into a guinea pig which had previously been inoculated with living bacilli, then the disease could be arrested. It has been claimed that Koch succumbed to government pressure in prematurely announcing the discovery of tuberculin.¹²¹ Whatever the case, the thousands of consumptives who flocked to Berlin for treatment were to be sorely disappointed. Koch's doses proved to be dangerously high, while his cultures were extremely unstable. As a result the disease was often exacerbated. Although by 1891 Koch's original tuberculin had been all but discredited, some tuberculosis specialists continued to experiment with it. The founder of the Tuberculin League, W. Camac Wilkinson, an Australian, claimed that tuberculin was perfectly safe, provided it was administered by an experienced practitioner. Wilkinson was far from alone in advocating tuberculin. Philip, too, used it both on 'suitable cases' and on the 'pretuberculous' to effect his much criticised 'anticipatory detuberculisational', an early, unsuccessful attempt at developing chemoprophylaxis.¹²² A 'large percentage' of cases at Bridge of Weir received tuberculin, while it was used even more extensively on the continent, particularly in Germany.¹²³

121 H. Sutherland, 'The Story of Tuberculin', In My Path. (1936). pp.148-181.

122 C. Clayson, Sir Robert Philip op cit. p.23. For Philip's defence of tuberculin, see B.M.J. 1911 pp. 466, 591 and 728.

123 N. F. op cit. 1913. Bryder, Mountain op cit. p.26.

Where Wilkinson differed from Philip and others was that, whereas the latter regarded tuberculin as an adjunct to institutional treatment, he saw it as an alternative.

How can we, as reasonable men, speak of sanatoria as a means of dealing with consumption among the poor, when we know that at great cost and sacrifice the sanatoria in England cannot deal with more than five per cent of the cases. Thus 95 per cent cannot be treated at sanatoria and even in the relatively few cases that are lucky enough to be selected for sanatoria more often than not ultimate failure is the result of treatment.¹²⁴

In answer to criticisms that a spell of sanatorium treatment was essential for educating the consumptive in the principles of hygienic, fresh-air treatment, Wilkinson rejoined, not unreasonably, that, 'better instruction can be given at far less trouble and cost in the homes of the poor by a specially trained district nurse.' He claimed that working-class consumptives could be treated and supervised at Tuberculin Dispensaries at a fraction of the cost of institutional treatment. Patients, moreover, would be able to continue working while undergoing treatment. Despite the fact that tuberculin was expensive, it was claimed that the cost would only be £2 per case treated.¹²⁵ Due to the absence of controlled trials, the claims for tuberculin were never properly tested. In large doses it was undoubtedly dangerous, while diluted doses left practitioners open to criticism of practising homoeopathy. The controversy that

124 Public Health, Feb. 1911. p.184.

125 Smith, Retreat op cit. p.59. and B.J.T.B. 1911 op cit.

had dogged tuberculin since Koch's early disasters in the 1890's was not the only reason why Wilkinson's scheme was not taken up in Great Britain. General practitioners regarded the Tuberculin Dispensaries as competing for patients, as, too, did the owners of sanatoria. The N.A.P.T. came out against tuberculin treatment in 1913.¹²⁶ Although adherents such as Wilkinson, Philip and Sutherland continued to treat with tuberculin until at least the 1930's, its principal use was as a diagnostic agent, notably in the Mantoux skin test.

As has been seen, the 'open-air' movement in this country can be traced back to George Boddington, who was much criticised for recommending abundant food and fresh air as a treatment for respiratory tuberculosis in the 1840's. Sanatoria, as such, were first developed by Brehmer, Dettweiler and Walther in Germany and, independently, by Trudeau in the Adirondacks in the U.S.A..¹²⁷ As has been seen, sanatoria were slow to catch on in Britain, Philip establishing the first as late as 1894. The sanatorium movement on the continent predated the germ-theory of disease, although not in this country. Germ-theory helped British sanatorium promoters argue that fresh air was the key to treatment, as opposed to altitude or climate, and thus it was not necessary to travel abroad to 'take the cure'. Open-air therapy was not, moreover, limited to tuberculosis. The fresh air charity movement was also active in denigrating the ill

¹²⁶ Smith, Retreat op cit. p.60.

¹²⁷ For the story of the early sanatorium pioneers see, R and J Dubos, The White Plague (1953) pp. 173-181.

effects of city life and promoting the health enhancing properties of the countryside. Such propaganda helped create a public opinion receptive to arguments that fresh-air had curative powers.¹²⁸

Increased concern over tuberculosis led the L.G.B. to investigate sanatorium treatment in 1902. The subsequent Report, which was published in 1907 and ran to 670 pages, was compiled by Herbert Timbrell Bulstrode, a Medical Inspector to the L.G.B. and lecturer in preventive medicine at Charing Cross Hospital.¹²⁹

Although recognising that sanatorium treatment was often beneficial in the short term, the Report was chary of ascribing any definite curative powers to them because of the inadequacy of any follow-up records maintained, an inadequacy due, in no small part, to,

the disparity between the actual results obtained and the optimistic prophecies made by some persons at the inauguration of the sanatorium movement in this country.¹³⁰

Bulstrode, nevertheless, concluded that sanatorium treatment might work provided three important criteria were satisfied. The disease had to be recognised and treated at an early stage; the patient must be able to stay in the sanatorium for a long period; and the patient must not return to living in conditions of poverty upon discharge. In order to meet these conditions, he strongly recommended the introduction of compulsory national

128 R. Cooter, 'Open-air therapy and the rise of open-air hospitals.' Bulletin of the Society for the Social History of Medicine. (S.S.H.M.). 35. Dec. 1984. p.45.

129 35th Annual Report of the L.G.B. 1905-6. Supplement op cit. [Cd 3657 1907].

130 ibid. p.181.

health insurance. Bulstrode was much impressed by the German scheme of national insurance, particularly as applied to sanatorium treatment, and he devoted a considerable part of his Report to highlighting its merits. He pointed to the fact that tuberculosis mortality rates had been constant in Germany prior to the introduction of health insurance and mass sanatoria building. Thereafter they had plummeted. His chronology was, however, somewhat suspect. Although compulsory national insurance was introduced in Germany in the 1880's, the first sanatoria for the working-class were not opened until 1897.¹³¹

The most vociferous advocates of sanatoria for the working-class were Latham and Garland. They claimed, in an influential publication of 1910, that tuberculosis was costing the nation at least £7 million per annum. They further purported to demonstrate that, for the sum of 3/- a year, a person could be insured for up to six months of sanatorium treatment, while his family would receive a pound a week maintenance over the same period.¹³²

Together they had earlier helped form a National Association for the Establishment and Maintenance of Sanatoria for Workers Suffering from Tuberculosis in 1905. The Association's main purpose was to try to persuade friendly societies to either erect sanatoria themselves, or subscribe to beds in existing ones. Their one notable success was the Benenden Sanatorium in Kent.

¹³¹ Hansard Vol. XXV11 July 12th 1911. p.422.

¹³² A. Latham and C.H. Garland, The Conquest of Consumption : an Economic Study. (1910).

Benenden catered solely for post-office employees who contributed a halfpenny a week from their wages for its maintenance. Although Garland claimed that post-office workers were 'fairly typical of the working-class as a whole', Smith points out that they were in fact 'uniquely privileged' because, as government employees, they could obtain up to six months leave of absence for treatment and could return to their old job when discharged.¹³³ Such job security was rare in 1910. Benenden boasted of an eighty per cent recovery rate, but, as usual, follow-up records were not available to assess the long-term results of treatment. Despite such claims, its example was not followed by other friendly societies or trade unions. By 1910, workers' self-help accounted for only nine other beds for the treatment of tuberculosis in the whole of Britain.¹³⁴ Friendly societies were all too aware of the financial difficulties of attempting to provide institutional treatment for consumptive members. A motion put before the Annual Conference of the Manchester Unity of Oddfellows in 1907 calling for a levy of a halfpenny per member per week to be raised to subsidise tuberculosis sanatoria was defeated by a large majority. It was feared that the state might shirk its responsibilities if friendly societies took up the financial burden.¹³⁵

133 Transactions N.A.P.T. Edinburgh 1910 op cit. p.137.
Smith, Retreat op cit. p.113.

134 Transactions *ibid* p.138.

135 Glasgow Herald May 24th 1907. p.8.

Although Latham and Garland were unsuccessful in persuading hard-nosed friendly societies to subscribe to sanatoria, both Smith and Bryder point to their influence on Lloyd-George's decision to make special provision for the treatment of tuberculosis in the 1911 National Insurance Act. Lloyd-George certainly referred to the Benenden statistics when debating the Bill. More importantly, he also quoted Latham and Garland's figures which claimed that twenty-five per cent of friendly society benefits were paid out to victims of tuberculosis, and that the tuberculous were in receipt of sickness benefit for an average of fifty-eight weeks. Lloyd-George, it is argued, recognised that tuberculosis would impose a tremendous strain on his insurance scheme and, believing the German and Benenden statistics that tuberculosis could be cured, introduced sanatorium benefit in an attempt to relieve the friendly societies of an unacceptable burden. Special provision was thus made for tuberculosis because its demise was essential for the working of the scheme.¹³⁶ Such a view is supported by Addison's reply to Conservative arguments that there was no need to legislate for a particular disease.

If you want to protect the Insurance Fund and sick pay, you should at the same time undertake the preventional treatment of that disease which causes a greater charge upon the funds than any other.¹³⁷

136 Bryder, Mountain op cit. p.39. and Smith, Retreat op cit. p.113.

137 Hansard July 12 1911. Vol. XXV111 p.396.

Lloyd-George's own pronouncements on sanatorium benefit were rather ambiguous, as indeed they were on the whole Act.¹³⁸ He believed 'the experiment would be a success, and he was sure its success would end in their extending the experiment a good deal further than was proposed in this Bill,' although, 'the warning not to trust exclusively to sanatoria was necessary.'¹³⁹

The Conservatives moved an amendment during the debate on the National Insurance Bill to exclude sanatorium benefit from the Act, in Austin Chamberlain's words, to remove 'this excrescence on the general scheme of the Bill.' They objected to legislating for the treatment of a particular disease and, more validly, to the fact that the virtues of sanatoria had yet to be proven. They did not, however, press their objections to a division. Labour's position was more equivocal. The leader of the Parliamentary Party, George Barnes, M.P. for Glasgow Blackfriars, thought the provision for tuberculosis to be the 'best part of the Bill', but objected to the cost of treatment coming from the Insurance Fund as 'it was a bad thing to charge poor persons for a disease which was largely preventable and largely due to poverty.' Barnes, perhaps, best summed up the Government's position with regard to sanatorium benefit:

138 It was maliciously suggested that Lloyd-George's motivation was rather more personal. 'He was suffering from a sore throat himself, and some people whispered that he was afraid that he had consumption.' W.J. Braithwaite, Lloyd-George's Ambulance Wagon. (1957) p.71.
 139 Hansard July 12th 1911. Vol. XXV111. p.419.

I want a start to be made. I think a start is being made in the good old fashioned blundering British fashion, not by academic consideration, but by blundering into it and getting something done.....This Bill is surrounded by vested interests of all sorts, and if we do not spend this 1/3d upon sanatoria then the doctors will have it, or somebody else, and I do not know any better way of spending it than upon sanatoria.¹⁴⁰

Lloyd-George may well have believed that sanatoria could cure tuberculosis and so relieve the Insurance Fund of an unacceptable burden. The belief was never put to the test. Sanatorium Benefit was terminated in 1921, not so much because tuberculosis was proving to be an intolerable drain on the funds, since the War had left the societies in surplus, but rather as part of a deal for awarding doctors higher capitation fees to keep up with inflation.¹⁴¹ Some 'academic consideration' might have led the Government to adopt a more cautious approach to sanatoria. As has been seen, the experience of Bridge of Weir had demonstrated that sanatoria did not cure in the long-term, even when admission was restricted to 'early' cases and patients were able to remain for the prescribed period of treatment. Had Lloyd-George been so concerned about tuberculosis draining the Insurance Funds, he would surely have put sanatoria to the test. The N.A.P.T.'s well orchestrated propaganda may well have turned his head, but, it is more likely that sanatorium benefit was merely a timely expedient. The provision of sanatorium benefit was very much a typical Lloyd-George measure. Public opinion and the tuberculosis lobby had

140 *ibid.* p.418.

141 B.B. Gilbert, British Social Policy (1970) p.269.

been bought off at what seemed a very reasonable price. The tuberculous were seen to be taken out of the ambit of the Poor Laws, while local authorities were given financial aid to erect and maintain sanatoria. Friendly societies were also happy with the tuberculosis provisions as their members did not have to pay the full price of treatment. This 'blundering' approach, however, served to lock the anti-tuberculosis campaign into a dependency upon institutional treatment, a dependency which, as will be seen, proved to be an expensive failure.

The sanatorium movement can be seen as part of the wider shift in medical attention away from concern about the environment towards the treatment of the individual.¹⁴² In 1910, W. Leslie McKenzie informed the annual meeting of the N.A.P.T. that,

we are long past the stage when we stop at general improvement of the environment. We are now well into the stage when we must deal with the individual case and his individual environment.¹⁴³

Bryder points out that the N.A.P.T.'s emphasis on education also served to shift the focus from public health towards individual responsibility.¹⁴⁴ This movement towards concern for the treatment of the

142 See, for example, J. Woodward, 'State intervention in health : from public health to personal well-being, 1830-1920.' in Woodward and Richards (eds) The Health profession and the State in Modern Britain. N. Eder's introduction to, National Health Insurance and the Medical Profession in Britain 1913-39. (New York 1982). J. Lewis, What Price Community Medicine? - The Philosophy Practice and Politics of Public Health Since 1919. (Brighton 1986).

143 Transactions N.A.P.T. Edinburgh 1910 op cit. p.68.

144 Bryder, Mountain. op cit. p.21.

individual was not, however, universal. In 1911, for example, A.K. Chalmers, Glasgow's progressive M.O.H., reported that,

unless the movement for the reduction of consumption begins on the basis of reform in the conditions of housing, time will be lost and disappointment result in any movement which proceeds on the assumption that sanatoria can do for the consumptive what fever hospitals accomplish for other infectious diseases...I believe poor food and insufficient housing are among the most powerful individual factors in the production of phthisis.¹⁴⁵

Again in 1912,

I doubt whether it is at the moment desirable to suggest the provision of further municipal beds until the value of those already agreed upon has been ascertained, and possibly also until we have made a beginning with the more urgent problem of housing the consumptive family after a return of one of its members from a period of institutional treatment.¹⁴⁶

Echoing Chalmers retrospectively, Dr. Guy, Edinburgh's Tuberculosis Officer, advocated that:

The disease should be attacked there (in the slums),...if the money which is at present being poured out on sanatoria had been spent on an improvement of housing conditions, the results would certainly not have been less satisfactory.¹⁴⁷

In his Report to the Royal Commission on the Poor Laws, J.C. McVail also stressed the need to tackle the disease in the home;

145 'Report on the Administrative Treatment of Pulmonary Phthisis in Glasgow.' M.O.H. Report Glasgow 1911. p.88.

146 M.O.H. Report Glasgow 1912 p.198.

147 Quoted in W.A. Brend, Health and the State op cit. p.238.

Sanatoriums are very good indeed, but the disease is far too prevalent to be controlled in this way at the present time. What I would emphasise is the absolute necessity of more stringently dealing with phthisis in the homes where it exists.¹⁴⁸

Not surprisingly, the Sanitary Inspectors were no great champions of sanatoria. Thus J. Crichton-Brown, President of the Sanitary Inspectors Association in 1911;

It might almost be questioned whether the large sum which it is proposed under the Insurance Bill to expend on the erection of sanatoria might not be more profitably employed in improving the houses of the people.¹⁴⁹

As has been seen, even the pro-sanatorium group were not entirely convinced. In evidence to the Scottish Royal Commission on the Poor Laws, Dr. D.J. McKenzie, a director of Bellefield Sanatorium, stated that he was 'rather disappointed' with the results of treatment because 'many of the cases are dead now.' Sanatoria, in addition, were 'very expensive' and he did not recommend that they be extended.¹⁵⁰ In a letter to the Corporation of Glasgow in 1911, Dr. W. L. Reid, Chairman of the Medical Advisory Board of the Consumption Sanatoria of Scotland, Bridge of Weir, admitted:

After an extensive experience of consumption and its treatment gained in connection with the above sanatoria as well as in private practice, the Board has come to the conclusion that if the scourge of consumption is to be controlled it can only be effected by the removal of slum properties in the city.¹⁵¹

148 Report to the Royal Commission on the Poor-Laws and Relief of Distress on Poor-Law Medical Relief in Certain Unions in England and Wales [Cd 4573] 1909. p.91.

149 Glasgow Herald 6th Sept. 1911. p.10.

150 Reports on Poor-Laws 1909 - Appendix op cit. [Cd 4978] p.325.

151 G.M.J. March 1911 p.8.

Despite establishing a Royal Commission on Housing in Scotland, it is doubtful that the Asquith Government ever intended interfering with the housing market to any significant extent, least of all on account of tuberculosis. As far as the state was concerned, the environment was to remain outwith the home. Tuberculosis was to be tackled, as it had been in Germany, by the provision of sanatorium benefit and a capital grant-in-aid to erect sanatoria. The insurance principal, moreover, underpinned the whole ethos of self-help so beloved of the Liberals. Despite Lloyd-George's bribe of 9d for 4d, the workers had to be seen to be contributing towards their own treatment. Although it was hardly self-evident why such education should require an institution, sanatoria would also serve to inculcate working-class consumptives with the ideals of hygiene and personal responsibility.

9. THE 1911 NATIONAL INSURANCE ACT AND THE ASTOR

COMMITTEE

The 1911 National Insurance Act provided that a sum of 1/3d per insured worker was set aside for sanatorium benefit. A further 1d was added by the Treasury to fund research.¹⁵² Sixpence of this sum was subsequently deducted to defray the cost of domiciliary treatment by panel doctors. This decision, bitterly opposed by both local authorities and insurance committees, was part of

¹⁵² This money eventually created the Medical Research Council. L. Bryder, 'Tuberculosis and the M.R.C. 1911-39.' Bulletin of the S.S.H.M. 37. 1985. pp.68-72.

the price Lloyd-George paid to ensure the co-operation of the B.M.A..¹⁵³ As an additional measure, the Finance Act set aside £1,500,000 to assist in the building of dispensaries, hospitals and sanatoria. The Scottish Local Government Board was allocated £157,900 of this to disburse among the local authorities.

In order to determine the best way to administer the anti-tuberculosis schemes, a Departmental Committee was appointed under the Chairmanship of Waldorf Astor. The Committee's interim recommendations, produced in haste due to the imminent introduction of national insurance, were almost wholly informed by the ideas of Philip. The dispensary, therefore, was to form the first unit of the scheme. It was recommended that a dispensary be provided for every 150,000 of population. Tuberculosis institutions formed the second unit of the scheme. One sanatorium bed was to be provided for every 5,000 of population. There was no recommendation as to the ideal number of hospital beds. The Astor Committee departed from Philip's prototype in one important respect. Philip advised that sanatoria be built as near to centres of population as possible to demonstrate that it was possible to practice open-air therapy in the city. The Committee, however, recommended that they be built out in

153 A delegation sent to complain about the decision was told by Lloyd-George that his action had relieved the insurance committees of the need to pay for domiciliary treatment, while local authorities were reminded that it was their duty to provide treatment for tuberculosis and that the Insurance Act would help discharge liabilities which they were bound to meet without any assistance from the state. M.O.H. Report Renfrew 1912. S.R.O. H.H. 62-43.

the country, where land prices were cheaper. This decision was to have important repercussions for the nascent tuberculosis schemes. As a result, two types of tuberculosis specialist came into existence; the local authority Tuberculosis Officer, based in the dispensary, and the Sanatorium Superintendent, based out in the country. Contrary to Philip's wishes, there was thus a separation of the curative and preventive arms of the scheme, with the former becoming the more attractive specialism. The decision to build sanatoria out in the country also served to further divorce the treatment of the disease from mainstream medicine.

The Astor Committee recommended that Philip's scheme be implemented nationally. They also recommended that provision for treatment be made universal. Acting on this, Lloyd-George extended sanatorium benefit to cover the dependants of the insured. In addition, local authorities were made responsible for treating the uninsured, half the cost being redeemable from the Treasury. These provisions, included almost as afterthoughts, were partly responsible for the rapid escalation in costs following the First War.¹⁵⁴ Every tuberculous man, woman and child in the country was, therefore, entitled to some form of treatment under the 1911 Act. This appeared to represent a radical new

154 The decision to extend treatment to the uninsured was conveyed in a letter from Lloyd-George to Henry Hobhouse, Chairman of the County Council Association, after the passing of the 1911 Insurance Act.

departure in social policy, but, as will be seen, the entitlement remained, for the most part, on paper.

The National Insurance Act and the Interim Report were heralded as a new dawn in the fight against tuberculosis.

No longer will the combat against the common foe, tuberculosis, be conducted as a guerilla war. The organised forces, which are to be brought against the Captain of the Men of Death and his satellites are to be co-ordinated, and the machinery of war is to be such as will be effective and continuous¹⁵⁵

Amid a welter of congratulatory articles in the Journal of Tuberculosis, Chalmers alone sounded a cautionary note,

The merits of the scheme are mainly concerned with methods of treatment, and but little with those of prevention: indeed the report is curiously lacking in this respect.¹⁵⁶

10. SUMMARY

Despite the fact that mortality rates had been falling steadily since 1870, tuberculosis was perceived to be a national problem at the turn of the century. Bryder's contention that such concern was raised at this time out of a desire to promote greater national efficiency is attractive, not least on the grounds that it is impossible to prove one way or another. Had the desire to improve the fitness of the population been so strong, however, one might have expected the attack on the disease to have taken a more positive direction than trusting in sanatoria. Smith's argument that the disease

¹⁵⁵ Editorial B.J.T.B. July 1912. p.133.

¹⁵⁶ ibid. p.158.

came under public scrutiny because the medical profession thrust it there is, perhaps, more persuasive.

Although the decline in mortality owed nothing to efforts directed against the disease, skillful lobbying by individuals like Philip and organisations such as the N.A.P.T. helped convince both the public and the government that dispensaries and institutional treatment were the solution to the problem. Critics of sanatoria for the working-class such as Wilkinson and Pearson could safely be ignored as advocating unacceptable alternatives. Those who argued for improvements in housing as a prerequisite for eliminating tuberculosis had to be satisfied with assurances that such improvements would eventually come.

It has been shown that Wilson's argument that Poor Law institutions were indirectly responsible for the rapid decline of the disease from the 1870s cannot apply in Scotland, principally because the provision of beds for tuberculous paupers was negligible before 1900. The shift of the disease out of the general hospitals and towards the Poor Law institutions did, however, eventually impose an ever increasing burden on the poor rates. This, coupled with a change in attitude towards poverty and tuberculosis, ensured that the disease would be taken out of the province of the Poor Laws. As charities were unable to cope with the problem and friendly societies were unwilling to take it up, responsibility for treatment and prevention devolved upon local authorities after 1906. Lacking the resources to meet the perceived

demand for sanatoria, local authorities in general had to wait until Lloyd-George supplied funding in 1911 before pressing ahead with plans for anti-tuberculosis schemes.

National insurance and sanatorium benefit, as envisioned by proponents such as Bulstrode, would also encourage incipient cases to seek treatment for prolonged periods of time. It was believed that this was essential if the schemes were to work. The schemes, modelled on Philip's Edinburgh prototype, were predicated, unfortunately, upon the mistaken assumption that dispensaries could identify incipient cases and that sanatoria could cure them. That this was so had already been demonstrated by the experience of charitable sanatoria like Quarrier's at Bridge of Weir. The decision to provide sanatorium benefit and finance sanatoria building unfortunately locked the anti-tuberculosis movement into a situation where it was almost entirely dependent upon institutions. As will be seen in the next chapter, such institutions not only failed to save lives and prevent infection, but they were also very expensive to maintain.

CHAPTER THREE

THE ANTI-TUBERCULOSIS SCHEMES 1911-1940

(1) INTRODUCTION

This chapter will deal primarily with the development of the tuberculosis schemes in Scotland which resulted from the provisions of the 1911 Insurance Act and the recommendations of the Astor Report. It will be shown that while the First War retarded progress, the discharge of a large number of tuberculous ex-servicemen coupled with the rise in civilian mortality in England and Wales lent greater impetus to the provision of institutional treatment for the disease. The anti-tuberculosis schemes were expanded at a time when criticism of sanatorium treatment was growing. The local authorities, however, were lured into increasing expenditure on tuberculosis institutions by the promise of government grants. In the event, the local authorities paid a far higher proportion of capital expenditure than central government. It will also be shown that finance was made available for sanatoria while being withheld from housing.

The development of the anti-tuberculosis schemes will be described, including the problems encountered by smaller local authorities which had a low rateable base, notably those in the Highlands and Islands. The individual units of the scheme; dispensaries, institutions and after-care facilities will be examined together with the treatment available, both in the institutions and at home. The schemes will then be

evaluated in terms of cost benefit analysis and it will be argued that the money spent was in no way commensurate with the poor results obtained from treatment. The reasons why the results were so bad will then be analysed and explanations sought for the continuance of a policy which was clearly of little value in combat tuberculosis.

(2) WORLD WAR ONE - SANATORIA REINFORCED

The local authorities' plans for large-scale institutional provision were interrupted by the First World War. Although, fearful of high unemployment, the Government initially urged local authorities to press ahead with all authorised work and to seek additional projects, by July 1915 the L.G.B. (Scotland) ordered them not to enter into any new contracts for the erection of tuberculosis institutions. In addition, several large hospitals intended for the treatment of tuberculosis were commandeered by the military. Robroyston, eventually to become the largest tuberculosis hospital in Britain, was taken over and completed by the military in 1917 and used to treat venereal disease. The absence of such institutions, however, did not impede the decline of the disease. In Glasgow there were, on average, only some 650 beds available to treat tuberculosis during the First War, yet mortality declined by thirteen per cent. During

the Second War, the availability of some 2,000 beds could not prevent a thirty per cent increase in mortality.¹

When Glasgow Corporation decided to postpone work on Southfield (later Mearnskirck) Sanatorium, Baillie James Stewart argued against the move on the grounds that tuberculosis beds would be at a premium after the war on account of the large number of discharged ex-servicemen who would be needing treatment. The Glasgow Medical Journal disputed this by claiming that army life was actually healthy and vigorous. When Robert Philip announced that twenty-four of his former patients were with the colours, the Journal thought its claim vindicated.

Similar cases must have occurred in the experience of others and they give ground for the belief that the percentage of tuberculous individuals who are injured by the military life is liable to be overstated. War, in fact, is fresh air treatment, although in its severest form.²

1918, in fact, witnessed the discharge of thousands of ex-servicemen suffering from tuberculosis. One estimate put the number of war pensioners disabled by the disease at over 65,000.³ In 1922, Glasgow, alone,

1 The Scottish mortality trend differed markedly from the British trend during both wars. During the First War, mortality increased in England and Wales but remained stationary in Scotland, during the Second War mortality began to decline in England and Wales after 1941 but continued to increase in Scotland until 1948. See Chapter Four below.

2 G.M.J. 1916. p.47.

3 Winter, Great War op cit. p.276. His source is Mitchell and Smith, Medical Services : Casualties and Medical Statistics of the Great War. (1931). Bryder quotes a figure of 58,000 Mountain p.70 derived from MacPherson, Leishman and Cummins (eds), The History of the Great War Medical Services : Pathology (London 1923), while a Government Report placed the number of respiratory cases

contained at least 785 ex-servicemen suffering from respiratory tuberculosis.⁴ Seventy per cent of male patients in Bridge of Weir in 1919 were ex-servicemen.

'Never were applications for admission more numerous than they have been during the past year.'⁵ A third of all male respiratory cases in Robroyston were also war pensioners.⁶ These men were accorded the dubious honour of receiving preference for sanatorium treatment. Their pensions enabled them to seek treatment earlier and for longer than their civilian counterparts, while the threat of pension withdrawal could be used as a sanction to keep them in.⁷

The presence of such a large number of tuberculous ex-servicemen reinforced the position of the hospital and sanatorium as the main line of defence against the disease. At a time when the medical benefits of such treatment were being questioned, they represented a timely, if short-lived, opportunity to expand the scheme. Despite instructions from the Board of Health not to enter into any new contracts for tuberculosis

at 35,000 in 1919. Report of the Interdepartmental Committee Appointed to Consider and Report upon the Immediate Practical Steps Which Should be Taken for the Provision of Residential Treatment for Discharged Soldiers and Sailors Suffering from Pulmonary Tuberculosis and for their Reintroduction into Employment, Especially on the Land. [Cmd 317] 1919. (Second Astor Report). p.7.

4 Report on an Inquiry into the Various Types of Tuberculous Patient with Reference to their Training and Re-employment. Glasgow Corporation Health Committee (G.C.H.C.) Minutes. Sept.1922. S.R.A. C1/3/67.

5 N.F. 1919.

6 Robroyston Tuberculosis Register - Greater Glasgow Health Board (GGHB) Archives H.B. 36 1/1.

7 Second Annual Report Scottish Board of Health 1920. [Cmd 1319] 1921. p.37.

institutions in 1921, sanatoria for heroes were left relatively unscathed by the Geddes Axe, while earlier their promised homes had been left, for the most part, on the drawing board. As can be seen from Fig. 3(i), there was no noticeable slowing up in the provision of beds during the 1920's. Training colonies and village settlements for ex-servicemen were affected by the cutbacks, however. The 1919 Astor Committee had estimated that £1.25 million could provide such facilities. After Geddes, their estimates were deemed to be £1.25 million too high.⁸

Fig. 3(i) Tuberculosis Bed Provision⁹

	<u>SCOTLAND</u>	<u>GLASGOW</u>		<u>SCOTLAND</u>	<u>GLASGOW</u>
1911	1,030		1932		1795
1914	1,600	650	1939		1575
1918	2,590		1940	5,300	1412
1920	3,232		1942		1778
1922	3,711	1209	1944	6,500	2004
1924	4,154	1379	1946		1761
1926	4,339	1379	1948		1646
1928	4,634	1386	1954	6,504	
1930	5,114	1373			

(3) SANATORIA CRITICISED

The Editorial of the British Journal of Tuberculosis called in 1922 for the setting up of a Royal Commission to examine 'the tuberculosis problem in all its bearings.' Despite ten years experience, the local

⁸ Second Astor Report. [Cmd 317] op cit. See, also, below, "After-Care".

⁹ Local Government Board, Board of health, Department of Health Reports Scotland. and G.C.H.C. Minutes.

authority anti-tuberculosis schemes were still failing to cure.

Much of the so-called dispensary, sanatorium and domiciliary treatment which is being provided at enormous expense to the country is little better than a farce. To imagine that 13 weeks' residence in an institution will accomplish real and permanent benefit for an advanced case is to live in a fool's paradise. Sanatorium treatment as now generally conducted has been shown to have been of limited service.¹⁰

Christopher Addison, the new Minister of Health, defended his proposed Housing Act before the 1919 Annual Conference of the N.A.P.T. as an essential element of preventive medicine, while at the same time questioning the emphasis placed on the provision of personal health services.

His own view was that the millions of pounds now being spent on our manifold health services were largely wasted because we had never had the foresight and the courage to tackle the capital expenditure necessary to remove the causes of disease. Education and enlightenment he placed second in importance to housing.¹¹

In 1920, George Newman, Chief Medical Officer of Health, registered disquiet over the fact that three quarters of all sanatorium cases treated in Britain and Germany were dead within five years.¹² Criticism was also still forthcoming from more predictable quarters. In his Presidential Address to the Society of Medical Officers of Health in 1922, T. Eustace Hill hoped that the failure

10 B.J.T.B. 1922. p.52.

11 Tubercle Nov. 1919. p.90. Addison's 'New Liberal' view never became official policy. He resigned as Minister of Health in March 1921 having alienated himself from nearly every organisation with a vested interest in housing and health as well as, more importantly, the Treasury. See Gilbert, British Social Policy op cit pp.137-155.

12 Bryder, Mountain op cit. p.69.

of sanatoria might serve as a lesson to encourage greater effort in prevention.

Personally, I hold a strong opinion that if the large expenditure on the provision of sanatoria etc. had been devoted to improving the housing of the people more permanently, more satisfactory results would have accrued. It is very doubtful, however, whether this money spent on tuberculosis schemes would, in any case, have been utilised for providing better houses, for at the time the housing needs of the country were not generally appreciated. If the comparative failure of our recent efforts to control pulmonary tuberculosis has the effect of hastening the solution of our housing problem, the financial outlay might almost be justified on that score alone.¹³

Striking a similar note, A. Maxwell Williamson, Edinburgh's M.O.H., complained that,

the results of sanatorium treatment are in no sense commensurate with the cost entailed, and I do feel assured that in time it will be generally recognised that that large sums laid out on preventive measures including prominently better housing conditions, will be generally adopted in preference to a continuation of our present methods.¹⁴

The eugenists went even further and claimed that sanatoria were actually detrimental to the treatment of respiratory tuberculosis. In 1926, Stocks and Karn published the results of an inquiry into the records of over 4,000 respiratory cases treated in sanatoria in Northern Ireland.¹⁵ 'Sanatorium treatment,' they concluded, 'as contrasted with other forms of treatment was associated to a significant degree with inferior progress.' This, they speculated, was due to 'the

¹³ Public Health Nov. 1922. p.29.

¹⁴ B.J.T.B. April 1918. p.63.

¹⁵ P. Stocks and N.M. Karn, 'On the influence of sanatoria and dispensary treatment and housing conditions on pulmonary tuberculosis.' Annals of Eugenics Vol.1. 1925-6. pp.407-454.

depressing psychological effects of a long period of enforced idleness in the company of patients similarly afflicted.' Their work created a furore in sanatorium circles and resulted in a flood of letters to the medical press.¹⁶ Although it was subsequently shown that their data was unreliable, Stocks' and Karn's investigation served to further undermine medical confidence in the efficacy of sanatoria.

Between 1918 and 1921, local authorities were urged to press ahead with their plans for institutional provision. This was partly due to the presence of the large number of tuberculous ex-servicemen and partly to the fact that incidence rates had increased in England and Wales during the war. When the recession hit in 1920, it might have been expected that sanatoria would be early casualties of a government heavily committed to retrenchment, particularly as their value could so easily be questioned. A government which had reneged on 'homes fit for heroes' would surely have had few qualms over curtailing sanatoria building. Medical Officers, however, were more successful at defending the need for institutions than they were at defending the need for houses.¹⁷ Moreover, as will be seen, Medical Officers were less inclined to criticise the emphasis placed on treatment over prevention once they themselves became responsible for administering the institutions. Concerned

16 Smith, Retreat op cit p.166-7.

17 For an account of the machinations involved in securing permission to procede with Mearnskirck, see MacGregor, Public Health in Glasgow op cit p. 96.

with their professional status, they preferred to be regarded as doctors rather than as sanitary police. Thus, contrary to Addison, prevention in the form of improved housing was accorded far less priority than clinical treatment, education and enlightenment.

Sanatoria, therefore, were allowed a stay of execution. So long as criticism was confined to the medical press, it was safe to do so. By the 1930's, when criticism became more widespread, it was too late. The anti-tuberculosis schemes were in place by then and the state was forced to defend their record.

(4) THE ANTI-TUBERCULOSIS SCHEMES

(a) ADMINISTRATION

The concern expressed by local authorities over the loss of 6d per insured case to panel doctors for domiciliary treatment proved well founded. In 1912, the Glasgow Burgh Insurance Committee agreed to pay the Corporation 25/- a week for insured persons treated in municipal institutions. This was raised to 30/- in June 1913. In addition, the Insurance Committee was obliged to pay one third of the cost of providing dispensary treatment. The inadequacy of the sum available under sanatorium benefit can be readily appreciated from the following statement:

No. of insured persons in Glasgow 1913	362,448
No. of phthisical cases among insured population	1,379
Total sum provided for sanatorium benefit at 1/3d per head	£22,653
less 6d per head for domiciliary treatment	9,061
less third of cost of dispensaries	<u>3,000</u>
	£10,592 18

Only £10,600 was available, therefore, for the treatment of 1,379 insured respiratory cases. At 30/- a week, this would only cover less than five weeks treatment for every case. In response, some Insurance Committees imposed a maximum time limit of three months on treatment, others allowed four.¹⁹ Allowing for a twelve week stay as the maximum, the Burgh Insurance Committee could only provide institutional treatment for less than half the insured workforce. The provision in the 1911 Act which enabled Committees to extend treatment to the dependants of insured members remained a dead letter as far as Glasgow was concerned. In practice, the Corporation took all the Insurance Committee's sanatorium benefit, subtracted the amount from their approved tuberculosis expenditure, halved it, and sent the L.G.B. (Scotland) an account for the remainder. This practice continued until sanatorium benefit was scrapped in 1921. Thereafter the Board of Health met one half of all approved expenditure. By so

18 'Private memorandum from M.O.H. to Glasgow Corporation Sub-committee on Prevention of Tuberculosis 1913.' S.R.A. D-TC 6/606/2/14.

19 N.F. 1914. In 1909 a tuberculosis specialist recommended anything from between six months to six years as the ideal duration for treatment. F.R. Walters, Sanatorium Treatment. (1909) p.310.

doing they hoped to keep a tight rein on costs. Without the Insurance Committee's money, more of the financial burden was placed on the local authorities. However, an attempt to persuade the Board to increase their contribution to seventy-five per cent met with no success.²⁰

If a large local authority like Glasgow had difficulty making sanatorium benefit work, elsewhere the problem was compounded by a shortage of insured workers. The Aberdeen County Insurance Committee could pay only for the domiciliary treatment of insured persons in 1920, institutional treatment being mainly confined to ex-servicemen.²¹ In Lewis District and Stornoway Burgh, with a population of 29,063, the appropriate expenditure on tuberculosis was estimated at £3,400 in 1919. Only £33 2/8d, in fact, was raised. In the mainland districts of Ross and Cromarty, £4,900 was estimated as appropriate expenditure. Nothing at all was spent there on the treatment of tuberculosis.²²

The Highlands and Islands of Scotland presented a unique challenge to the working of the Insurance Act. The most serious problem was that they contained a sparse population scattered throughout large, often barely accessible, tracts of land. As a result 'medical attendance is uncertain for the people, exceptionally onerous or even hazardous for the doctor, and generally

20 G.C.H.C. Minutes 27th July 1920. S.R.A. C1/3/63. p.2026.

21 Report by Tuberculosis Medical Officer. County of Aberdeen 1920 p.3.

22 Scottish Records Office (S.R.O.) H.H. 65/6.

inadequate.²³ The poverty as well as the paucity of the population further weakened the public health rate-base. As has been seen, even where set at its maximum of 1/- in the pound, it often barely raised enough to cover administration. In addition, the seasonal nature of much of the employment in the area made the provisions of the Insurance Act only partially effective. Although local authorities could treat uninsured cases of tuberculosis and claim half the cost from central government, such an arrangement meant little where the public health budget was minimal.

When the local authority is able to provide nothing at all or at best a very small amount, the subsidy of fifty per cent from the Treasury would be nugatory. Fifty per cent of nothing is still nothing, and fifty per cent of a hopelessly inadequate sum is still hopelessly inadequate. It follows that, if pulmonary tuberculosis in large areas of the Highlands and Islands is to be put on the same plane as pulmonary tuberculosis in other parts of Scotland, a special Imperial subsidy will be necessary.²⁴

In recognition of these problems, a Committee was established to report on the Highlands and Islands medical services.²⁵ The subsequent report, known as the Dewar Report, recommended the creation of a unified medical service to cover the whole area to be funded by a treasury grant. For tuberculosis hospitals and sanatoria, 'the case for such an additional subsidy' was found to be 'overwhelming.'

23 Highland and Islands Medical Services Committee Report Vol. 1. [Cd 6559] 1911. (Dewar Report). p.13.

24 ibid p.27.

25 See D.Hamilton, 'The Highlands and Islands Medical Services.' in McLachlan (ed) Improving the Common Weal (Edinburgh 1987) pp 81-90.

The case for such a subsidy may well have been overwhelming, but the response was most certainly not. The first special grant amounted to only £300 in 1921 and was limited to Lewis, South Uist and Shetland. By 1928 £3,000 was made available, rising to £3,400 by 1938. Such sums were totally inadequate in compensating for the low rate-base. At the time certain areas of the Highlands and Islands, notably Lewis, were experiencing a virtual epidemic of the disease.²⁶ Institutional provision as a means of segregating advanced cases arguably made more sense in the Highlands and Islands than in the lowlands because, in general, the northern community possessed less immunity to the disease.

Although the Highlands and Islands represented an extreme case, the problem of small authorities with few resources being made responsible for the administrative control of tuberculosis was not confined to the north of Scotland. Very small local authorities continued to be the norm in rural Scotland up until 1929. In Fife, for example, it was reported that no fewer than thirty-two separate local authorities were responsible for some aspect of the control of tuberculosis in 1920.²⁷ Central government urged smaller authorities to combine and pool their resources to provide institutional accommodation. Three such large combinations were created, but others

²⁶ See Chapter Four below.

²⁷ 2nd Annual Report Scottish Board of Health 1920. [Cmd 1319] 1921. p.32. The plurality of small authorities, each responsible for its own particular area, rendered health care provision particularly chaotic in Fife. The Local Government (Scotland) Act 1929 brought them all together under the County Authority.

failed, mainly due to lack of agreement over how much each authority should contribute. Many smaller authorities discharged their duties by sending cases to institutions controlled by larger authorities or independent charities. West, Mid and East Lothian, however, did combine with Berwick, Selkirk, Roxburgh and Peebles to finance a large sanatorium at East Fortune. Similarly, Dumfries, Galloway, Kirkcubright and Wigtown co-operated to erect the Lochmaben Sanatorium. The most successful combination was the Aberdeen Regional Scheme. Aberdeen Burgh, Aberdeenshire and Kincardineshire local authorities combined, under the terms of the 1929 Local Government Act, to form a joint public health authority covering 350,000 people.²⁸ This combination differed from the others in as much as its function was not solely to provide institutional treatment, but also to administer all aspects of public health.

Under Section 64 of the National Insurance Act and Section 16(1) of the Finance Act 1911, the L.G.B. (Scotland) was allocated £157,900 to distribute to local authorities to assist building dispensaries, sanatoria and hospitals. In April 1913, the Board announced that they would disburse this as follows: £90 per bed for sanatoria and hospitals erected since the passing of the Act; £50 per bed for extensions to existing institutions; and grants up to £1 per 750 of population for dispensaries. Demand for grant-in-aid, however, proved so

²⁸ J. Brotherstone and J. Brims, 'The development of public medical care - 1900-48.' in McLachlan (ed) Common Weal op cit p.72-73.

great that it was cut in early 1915 to £50 for new beds and £30 for additional beds. In November 1919, however, the capital grant was raised to £180 per bed in order to secure both the expeditious provision of new accommodation and to provide employment. Work on Mearns Kirk Sanatorium in Glasgow was begun under the terms of this grant in 1921. The hospital was not fully completed until 1932 at a total cost of £461,027.²⁹ Grant-in-aid was received amounting to £83,520, which, for the 464 beds provided, worked out at exactly £180 per bed. However, it can be seen that the Corporation was left to pay for eighty-two per cent of the cost. Capital grants, therefore, only partially subsidised post-war sanatoria construction, the largest part of the cost being met by the ratepayer.

The administration of the schemes was very inconsistent, particularly before 1929. Even in the 1930s, the problem remained of local authorities having too small a ratebase to justify high capital expenditure. It is not, however, clear that the ratepayers suffered as a result of such neglect. As will be seen, the schemes proved to be ineffective at both curing and preventing the disease. In Fife, where the responsibility for the scheme was shared by many different authorities and where there were no tuberculosis dispensaries, mortality from the disease was, on average, twenty-seven per cent lower

²⁹ G.C.H.C. Minutes 30th April 1930. C1/3/82.

than Scotland as a whole in the period 1900-1950.³⁰ The most comprehensive anti-tuberculosis scheme was in Glasgow and yet average respiratory tuberculosis mortality there for the years 1924-26 was fifty per cent greater than it was in Dunfermline and Kirkaldy where relatively little was spent on providing an anti-tuberculosis service.

(b) .DISPENSARIES

In 1914 there were seventeen dispensaries in Scotland. These were increased to thirty-nine by 1931, and to sixty by 1939. As would be expected, dispensaries proved the easiest unit of the anti-tuberculosis schemes to put into operation. Local authorities could readily make use of existing buildings. Thus in Glasgow, five Parish Council dispensaries were made available to the Corporation in 1909 to serve for a few hours a week as tuberculosis dispensaries. These were replaced three years later when the Corporation erected purpose-built dispensaries. Edinburgh continued to use Philip's dispensary which had been moved to expanded premises in Spittal Street in 1911. Leith dispensary was incorporated into the Edinburgh Scheme in 1920. Most large towns had a dispensary of some sort, often located in the town hall. Dispensaries, however, proved impractical in rural areas. Only ten of the thirty-one Scottish counties could boast

30 S. Paterson, The Control of Infectious Diseases in Fife c1855-1950. University of St. Andrews PhD Thesis 1989. p.413.

of a dispensary in 1939.³¹ Fifeshire, population 201,476, possessed no dispensary. In all, over 910,000 people had no access to a tuberculosis dispensary in Scotland.³²

Dispensaries were generally managed by the Tuberculosis Officer. This post was generally filled by an Assistant Medical Officer or, in the case of smaller authorities, by the Medical Officer himself. This was never a very prestigious job. Avenues to promotion were mainly limited to becoming the superintendent of a tuberculosis institution since full-time Medical Officer of Health posts were few on the ground.³³ Remuneration was relatively low, giving rise to claims that the service did not attract high calibre recruits. Tuberculosis Officers formed a Tuberculosis Society in 1918 to campaign for higher salaries and improved status. Significantly, they wished to dissociate themselves from the public health departments of local authorities which enjoyed far less status than even general practice. They argued, unsuccessfully, that tuberculosis should be a separate branch of public medicine with its own hierarchy answerable only to the Ministry of Health.³⁴ The first edition of the specialist journal Tubercle complained that they received only half the remuneration of the average general practitioner and that they received no

31 Bryder quotes eight, Mountain op cit. p.74., but does not take into account dispensaries controlled by combined county councils.

32 Public Health June 1941 p.158.

33 In Glasgow, however, the three Medical Officers of Health who served the city between 1900-50, Chalmers, MacGregor and Laidlaw, had all been former Tuberculosis Officers.

34 Tubercle Oct. 1919. p.35.

pension on retirement.³⁵ This was probably exaggerated. In 1920 an Assistant Tuberculosis Officer in Glasgow was paid £500 per annum at a time when a general practitioner's average salary in Britain was £760.³⁶ In the 1930's, however, local authorities often advertised posts below the minimum salary scale of £500 which had been agreed in 1929. At the same time, it has been claimed that the expansion of local authority health services created a further promotion block.³⁷ MacNalty pointed to the difficulty of obtaining qualified men in his report on tuberculosis in 1932.³⁸ In a review of the tuberculosis schemes in 1937, Gregory Kayne complained with respect to staff, that,

35 ibid p.36.

36 G.C.H.C. Minutes March 1920. S.R.A. C1/3/61 p.1153. A. Digby and N. Bosanquet, 'National Health Insurance and Private Practice.' Economic History Review 2nd Series Vol XL1 Feb. 1988. p.80. The starting salary for a Physician Superintendent at Mearns Kirk in 1928 was £750. The post was filled by a former Tuberculosis Officer with eighteen years experience of treating the disease in the Eastern District of Glasgow. G.C.H.C. Minutes.+ Sept. 1928. S.R.A. C1/3/78.

37 Lewis, What Price Community Medicine? op cit p.25.

38 A.S. MacNalty, 'A Report on Tuberculosis.' Reports on Public Health and Medical Subjects No.64. (HMSO 1932) p. 69. It was, of course, very much 'men' to whom he was referring, married women having been driven from the job market in the 1920's. In 1921, for example, Glasgow Corporation's Public Health Department decided to terminate the services of all married women whose husbands were in work. Among the casualties was Dr. Mary Moore, a Tuberculosis Officer with six years' experience. G.C.H.C. Minutes C1/3/66. p.273. G.M.J. 1921 p.364.

at present the conditions are still not such as to attract the first-class man. The inadequate schemes or badly equipped dispensaries will discourage some; the low salaries others (since only a few can hope to achieve the well paid senior posts). The vicious circle thus established will be found difficult to break within the present framework of the scheme.³⁹

Despite all the Officers' efforts to secure professional recognition, tuberculosis was still regarded by many in the medical profession as a second-class disease to be treated by second-class physicians.⁴⁰ A leading chest specialist, for example, asked in 1929,

how many medical men are there who would send a member of their own family to consult their local Medical Officer of Health for an opinion on a chest ailment?⁴¹

Dispensaries, as envisaged by Philip, were to serve as registration and screening points. In the interwar years they were supposed to liaise, in theory, with a host of state, local government, voluntary and ad hoc organisations in an effort both to secure 'early' cases and supervise the care of sanatorium-treated patients. As will be seen, these expanded schemes, as represented by Figs. 3(ii) and 3(iii), operated entirely in the

39 G.G. Kayne, The Control of Tuberculosis in England - Past and Present. (1937). p.146.

40 Some tuberculosis specialists, particularly sanatorium superintendents, were drawn to the treatment of the disease because they, themselves, were former patients. One such was Christopher Clayson who was a patient of Philip before he became his pupil. Three of the four doctors at Southfield in 1940, including Clayson, were reported as having once been former patients themselves. Diary of a Southfield Patient. Another notable example was S. Vere Pearson, superintendent of the famous private sanatorium at Mundesley, Norfolk. Pearson, Men, Medicine and Myself. (1946).

41 Tubercle. May. 1929. p.402.

Fig. 3(ii). - Principal features in a tuberculosis scheme of a local authority.

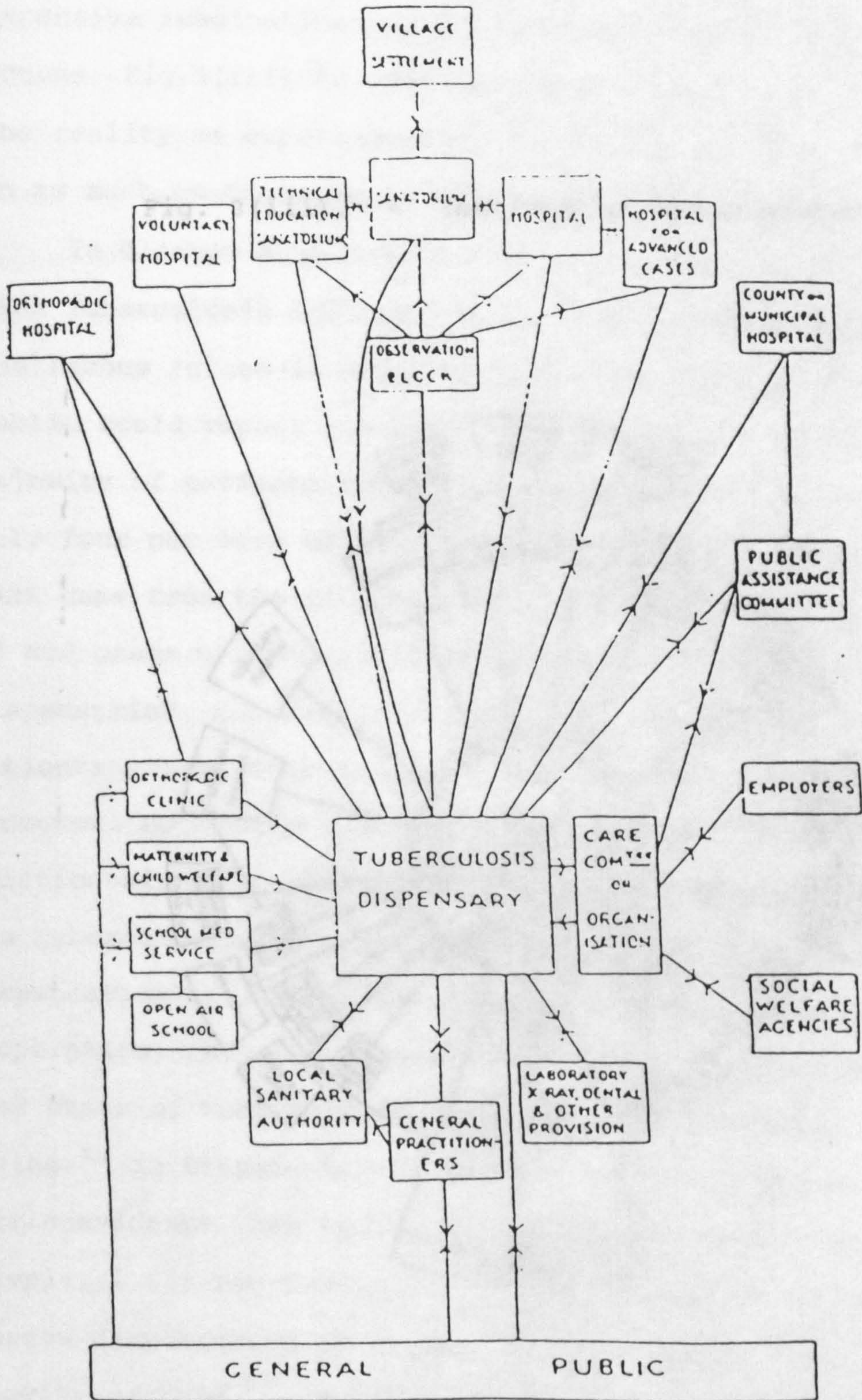
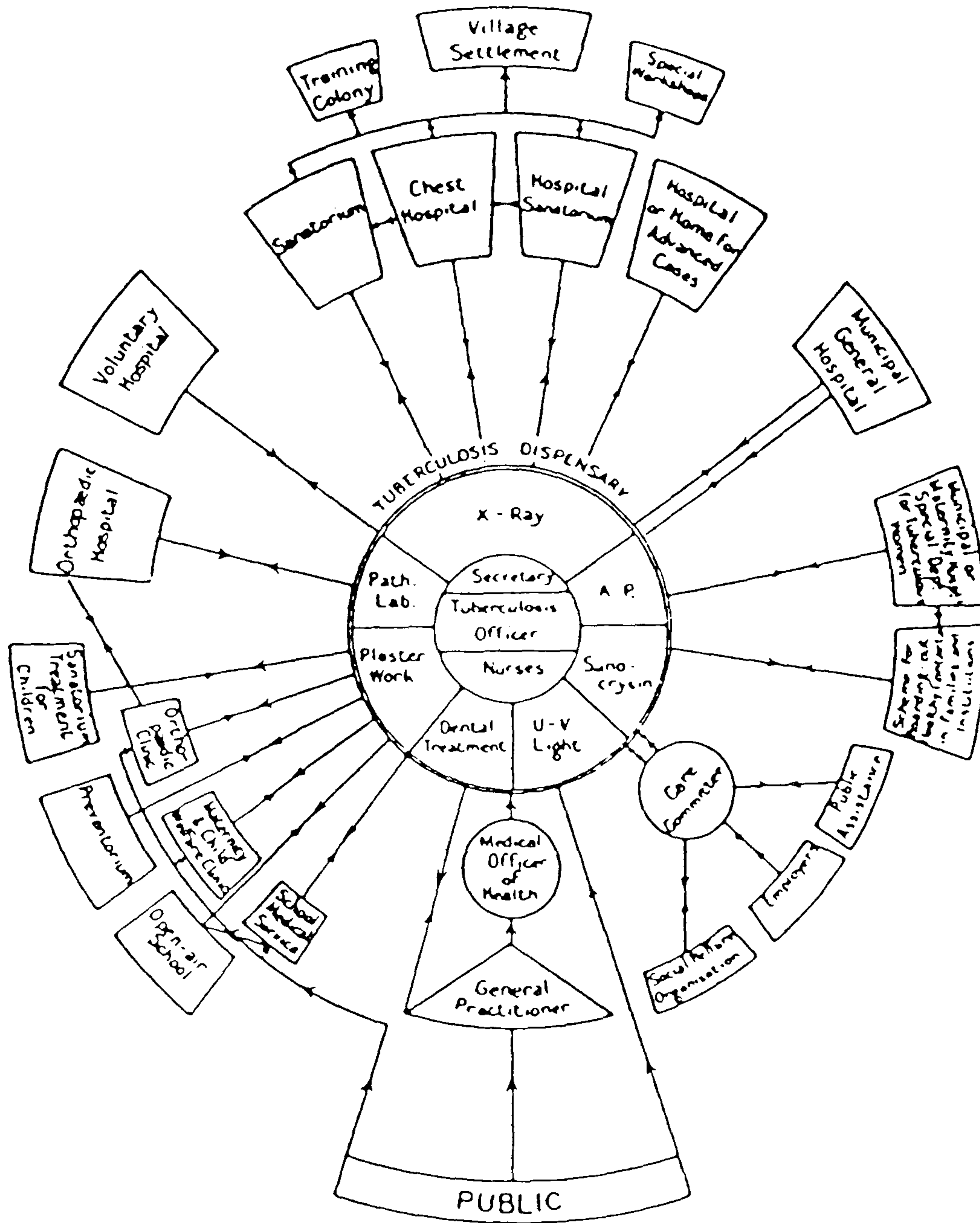


DIAGRAM OF THE PRINCIPAL FEATURES IN A TUBERCULOSIS SCHEME OF A LOCAL AUTHORITY

SOURCE: MC NALTY 42

Fig. 3(iii). - The ideal tuberculosis scheme.



expansive imaginations of their progenitors.⁴² Kayne's scheme, Fig.3(iii) is, perhaps, more representative of the reality as experienced by the victims of the disease in as much as there is no path out of it.

In Glasgow each dispensary was staffed by a full-time Tuberculosis Officer and five tuberculosis nurses, the famous 'green ladies.' Although, in theory, the public could report direct to the dispensary, the vast majority of patients were referred by their own doctor. Only four per cent of new notifications in Aberdeen in 1921 came from the dispensary. In Glasgow eight per cent of new cases were so notified in 1929.⁴³ The dispensaries, moreover, were not supposed to 'treat' patients unless they were uninsured and could not afford a doctor. Both Smith and Bryder claim that a very poor relationship existed between general practitioners and the Tuberculosis Officers, the former regarding the dispensaries as rivals for patients. This lack of cooperation, they argue, was reflected by the fact that many cases of tuberculosis were not notified while living.⁴⁴ In Glasgow and Edinburgh, at least, there is little evidence that this was the case. In 1931, for example, 1,521 non-tuberculous cases were referred to Glasgow dispensaries by general practitioners, the majority of ~~these cases~~ suffering from other pulmonary

42 Kayne, Control of Tuberculosis. op cit. p.133.
McNalty, Public Health and Medical Subjects No. 64. op cit. p.68.

43 Report by Tuberculosis Medical Officer County of Aberdeen 1921 p.7. M.O.H. Report Glasgow 1929. p.131.

44 Smith, Retreat op cit p.71. Bryder, Mountain op cit p.73.

conditions.⁴⁵ Such a high figure does not suggest that doctors were reluctant to refer cases to the Tuberculosis Officer. An earlier Report of 1926, moreover, pointed out that 'an encouraging factor of the scheme is that medical practitioners readily avail themselves of the services of the Tuberculosis Officer.' In Edinburgh, the Tuberculosis Officer's relationship with 'the medical men' was described as 'most amicable'.⁴⁶ The relatively large numbers of cases notified only at death was, perhaps, more a reflection of the reluctance of patients to seek treatment until they were moribund.

The small number of patients registered direct from dispensaries suggests that they were failing to fulfil their prime function, the discovery of contact cases. A survey conducted in Worcestershire in 1927 determined that the tuberculosis death-rate among contacts was eight times higher than among a control group, while the morbidity rate was sixteen times higher.⁴⁷ One fifth of all young adults who died of respiratory tuberculosis in the east end of Glasgow between 1928-32 had received 'definite contact infection.'⁴⁸ Despite paying no fewer than 53,919 home visits in 1932 alone, the tuberculosis

45 'Administration of tuberculosis in Glasgow - 1933' S.R.A. D-HE 1/1/(2). p.13. Presumably, these numbers did not include any members of the G.P.s' own families.

46 'The Glasgow Tuberculosis Scheme - 1926' S.R.A. LP1/135. p.10. Tubercle May 1920. p.391.

47 H.M. Turner, 'The actual tuberculosis morbidity and mortality amongst house contacts of sputum-positive cases in North Worcestershire.' Tubercle Jan. 1931. pp.145-155. Also, MacNalty, 'Report on Tuberculosis 1932.' op cit. p.165.

48 S.Laidlaw, The Epidemiology of Young Adult Phthisis. Unpublished PhD Thesis - University of Glasgow. 1934. p.110.

nurses were failing to detect such cases. The very small number of 'early' cases admitted to the tuberculosis institutions also points to a failure in this respect. The fault did not lie with the nurses, each of whom must have been visiting at least ten patients a day. This would have given little enough time to see registered patients, let alone screen contacts. As will be seen, the detection of early cases was an extremely difficult task, often requiring a period of observation in an institution. A few perfunctory questions as to the family's health was no substitute. In reality Philip's proud march-past was reduced to a very reluctant shuffle.

Dispensaries, therefore, did not attract or detect many incipient cases of respiratory tuberculosis. As the main portal to the tuberculosis schemes, this failure undermined the anti-tuberculosis campaign. Their recording functions, however, made them an invaluable source of information on the epidemiological aspects of the disease. The tuberculosis nurses, too, must have played a major role in mobilising the scarce resources which were available for the after-care of patients who had returned home from a spell of institutional treatment. In Glasgow dispensaries accounted for just over ten per cent of the total maintenance costs of the anti-tuberculosis schemes. (see Fig. 3 (vii) below). As such they may just have represented value for money. The same, however, cannot be said for the second unit of the scheme, institutional treatment.

(c). SANATORIA AND TUBERCULOSIS HOSPITALS

In 1911 there were some 1,030 beds available for the treatment of tuberculosis in Scotland, representing one bed per 4,622 people. On the eve of the First War, these had been doubled to 2,114, 1:2,000 of population. By 1929, there were no fewer than 5,114 tuberculosis beds in Scotland, representing one for every 900 people. (Fig. 3(i)). By 1930 there were about twice the number of tuberculosis beds in Scotland per head of population than there were in England and Wales. In England there were, on average, some 69 beds per 100 deaths from tuberculosis, while in Scotland there were 122 beds.⁴⁹ The greater provision of beds in Scotland was a reflection of the housing problem which made domiciliary treatment impractical. The south caught up during the next decade as there was no further institutional provision in Scotland until the Second War. The large number of beds available in Scotland in the 1920s was cited by contemporaries as evidence that institutional treatment was effective, because at the time mortality rates in Scotland were lower.⁵⁰ Such claims can be easily disproved, however, by examining the case of Glasgow in the interwar years.

49 Bryder, Mountain op cit p.82. Reports Dept. Health Scotland. It is unclear whether Bryder includes Poor Law provision, which was much greater in England, in her calculations.

50 H.J. Rae, 'Some local and general problems in tuberculosis administration.' E.M.J. 1931 p.152.

In Glasgow tuberculosis bed provision doubled from 650 in 1914 to 1,373 in 1930, representing one bed for every 728 people. With the opening of Mearnskirck Sanatorium in 1932, Glasgow's provision of institutional accommodation was complete. By then, 1,675 beds were available for the treatment of the disease in the city: 1,225 in hospitals, 282 in sanatoria and 148 in the old PoorLaw infirmaries. With 144 beds for every 100 deaths from the disease, Glasgow ranked behind only Sheffield as providing the highest number of tuberculosis beds in Britain. Given the claims made for institutional treatment, one would have expected such an endowment to be reflected in mortality statistics, but, in fact, as will be seen, Glasgow's relative position with respect to respiratory tuberculosis deteriorated badly in the 1930's.⁵¹

As has been noted, at the end of the war the L.G.B. (Scotland) raised the capital allowance for new sanatorium beds in an attempt to expedite their construction. High building costs and labour shortages proved to be the main obstacles. These constraints, however, were partly circumvented by the judicious use of war buildings and army surplus material. The naval air station at East Fortune, which had serviced balloons and dirigibles during the war, was purchased by the South-Eastern Authorities Joint Sanatorium Board to accommodate over 200 patients. The seventy bed Lochmaben Sanatorium

⁵¹ See Chapter Four. Also N. McFarlane, 'Hospitals, housing and tuberculosis in Glasgow.' Journal of the Social History of Medicine. April 1989. pp. 59-85.

was built from materials obtained from hostels formerly used to house munitions workers at Gretna, while an equal number of beds were made available following the conversion of the naval hospital at Invergordon in Ross and Cromarty. The Scottish Board of Health issued a Circular to all local authorities in 1920 offering to sell ex-army huts at one third discount for use in sanatoria. Glasgow Corporation purchased some to form an Auxiliary Hospital at Robroyston. The Corporation, however, had earlier rejected an L.G.B. (Scotland) proposal to utilise the temporary buildings at the Dalmellington Air Force camp as they were 'totally unsuitable.'⁵²

The post-war trend was very much towards building larger institutions. In 1914 there had been ninety-six sanatoria and hospitals for the treatment of tuberculosis in Scotland, but only two, Bridge of Weir and the Royal Victoria Hospital, Edinburgh, contained over 100 beds. By 1929, there were 119 institutions, nineteen of which had over 100 beds, thirteen contained between fifty and one hundred and ninety-seven had fewer than fifty.⁵³

Robroyston, alone, contained 548 beds for the treatment of tuberculosis in 1928.⁵⁴ Other large institutions

52 W.A. Murray, A Life Worth Living (Haddington 1982) p.17. 4th Annual Report Scottish Board of Health 1922 [Cmd 1887] 1923. (HMSO) p.20. G.C.H.C. Minutes April 1919, Jan 1920 p.585. S.R.A. C1/3/61.

53 20th Annual Report L.G.B. (Scotland) 1914. [Cd 8041] 1915. p.LXXXV 11th Annual Report Department of Health for Scotland 1929 [Cmd 3529] 1930. p.93.

54 This tuberculosis factory (it was said that even the cats in Robroyston were tuberculous) was situated amidst one of the biggest rubbish dumps in Glasgow, one of the tips being within a hundred yards of the gate. As a

included: Hairmyres, Lanarkshire (1919), 260 beds; Ruchill, Glasgow (1915), 272 beds; East Fortune, East Lothian (1923), 200 beds; and, Glenlomond Fife (1922), 134 beds.

There was much confusion as to how each institution should best be utilised. In theory 'early' cases were to be sent to sanatoria to be cured while 'advanced' cases were to be isolated in hospital, but, in reality, the distinction became blurred. The Inverness Sanatorium at Fort Augustus was reserved for incipient cases, but the M.O.H. complained in 1911 that too many patients were still being received in too advanced a condition. Similarly, the Argyll Sanatorium restricted admission to 'early' cases but was forced to relax the rule. Even so, some beds remained empty while 'advanced' cases continued to live with their families at home.⁵⁵ In Glasgow, the Corporation's policy was one of attempting to provide as many beds as possible to accommodate advanced cases who could not undertake domiciliary treatment because their homes were too small.

The policy of the Corporation has been in great measure determined by the housing conditions of the population. In a city of small houses, institutional provision has to be on a relatively large scale.⁵⁶

result, fresh air treatment was often punctuated by the miasma of rotting fish and vegetables. 'It is not merely occasional whiffs that find their way to the hospital. The strong, pungent odours are persistent.' The Glasgow Citizen 23rd Sept. 1921. p.1.

⁵⁵ County Medical Officers Reports 1911 and 1912. S.R.O. HH. 62-42 p.5. HH. 62-43 p.16.

⁵⁶ 'The Glasgow Tuberculosis Scheme - 1926' op cit p.1.

By 1932, of the 1,672 beds available for the treatment of tuberculosis in Glasgow, only 282 were in sanatoria. Of these, only the 110 beds in Bellefield were directly controlled by the Corporation, the other 172 being leased from other local authorities or charities. This preference for hospitals over sanatoria was equally a reflection of the inability to attract suitable 'early' cases.⁵⁷ Only forty-one of the 129 cases of respiratory tuberculosis treated in Bellefield in 1929 had been admitted as 'early' cases. At Bridge of Weir, another 'sanatorium', only ten per cent of admissions in 1926 were 'early', over fifty per cent were advanced. The proportion of 'early' cases in Robroyston was thirteen per cent in 1929, while in Ruchill there was less than one per cent. These 'death-camps' for advanced, hopeless cases must have been extremely depressing places.

The majority of these patients are not going to be cured, many of them no doubt may be sufficiently improved to face the world again (for a short time) but the majority are going to die, and most of them realise it.⁵⁸

Hairmyres Sanatorium at East Kilbride in Lanarkshire had been built with the intention of treating only 'early' cases. As such, workshop and training facilities were provided for ambulant cases, most of whom, being miners, could not return to their former occupation.⁵⁹ By 1933, however, cases were being admitted in all stages of the

57 The problems of attracting 'early' cases will be examined below in the section entitled Appraisal of Treatment."

58 W. Davidson, 'Some observations on advanced pulmonary tuberculosis.' G.M.J. 1916. p.330.

59 See below, "After-care."

disease. The same year the sanatorium was redesignated a 'colony', 'because of the stigma attached to the names tuberculosis and sanatorium.'⁶⁰

The last major tuberculosis institution to be built in Scotland, Mearnskirk in Glasgow, was originally intended to accommodate 300 children suffering from non-respiratory tuberculosis and 160 'early' adult respiratory cases, for whom workshop and training facilities were to be provided. In 1929 the Board of Health wrote to the Corporation suggesting that Mearnskirk be reserved solely for children. This suggestion was adopted and work on the rehabilitation facilities abandoned; tacit admission that there were too few suitable cases to take advantage of them. Mearnskirk was to specialise as an orthopaedic centre for the treatment of non-respiratory tuberculosis and was to cater for the whole of Scotland.

During the 1920's, therefore, there was a shift away from the original ideals of sanatorium treatment towards regarding institutions as performing mainly segregative functions.⁶¹ Although therapeutics continued to be predicated upon the principles of the open-air regime, the paucity of 'early' cases precluded any expectation of effecting widespread cures. Hospital beds were provided in such large numbers because overcrowding in the

⁶⁰ B.J.T.B. 1923 p.37. County M.O.H. Report Lanarkshire 1936. S.R.A. 10/12/2.

⁶¹ The limitations of sanatoria had been recognised a decade earlier in the United States where resources were also redeployed to provide isolation hospitals. Teller, The Tuberculosis Movement op cit pp. 85-94.

traditional, small, Scottish houses often militated against the domiciliary treatment of the typical 'advanced', infectious case. Nevertheless, even in a city with as much tuberculosis bed provision as Glasgow, seventy-five per cent of all registered cases were still undergoing domiciliary treatment in 1930. The Department of Health reported in 1937 that:

In spite of the comparatively large number of available beds there is often a waiting list for the more acute type of pulmonary tuberculosis. This is unfortunate, because acute cases tend to suffer more than others from delay, especially when economic circumstances are unfavourable. On the other hand there are often vacancies for ambulant cases.⁶²

National Insurance and the anti-tuberculosis schemes had thus failed to attract 'early' cases and hence one of the major criteria which Bulstrode had identified as being essential for the success of sanatorium treatment was not satisfied.

While it was becoming increasingly obvious that sanatoria were not attracting suitable respiratory cases and as their preventive and educative roles began to be stressed, more beds were made available for the treatment of non-respiratory tuberculosis. The conservative or surgical treatment of such cases was a long and expensive process, but, in comparison with the results of treatment of respiratory cases, was attended by a degree of success perhaps commensurate with the resources deployed, particularly as the majority of patients were children.⁶³

⁶² 9th Annual Report Dept. of Health for Scotland 1937.
[Cmd 5713] 1938. p.96.

⁶³ See below 'Results of Treatment.'

Thus, between 1914-1918 an annual average of only 684 cases of non-respiratory tuberculosis were admitted to sanatoria and hospitals in Scotland. By 1924, this figure had almost trebled to an average of 1,990. Over the same period respiratory admissions increased from an average of 3,972 to 4,457, a twelve per cent increase.⁶⁴ These figures are even more striking than they appear because non-respiratory cases usually received much longer periods of treatment.

This shift towards increasing provision for non-respiratory tuberculosis was also, in part, a result of the decision to scrap sanatorium benefit in 1921. As has been seen, such benefit barely sufficed to cover insured workers, let alone their dependants. This increasing concern to provide beds for children did not extend too far, however. Although the plans for Mearnskirck Sanatorium had been drawn up as early as 1913, it was not officially opened until 1932. Not all the delay could be blamed on the war. The procedure whereby the Corporation had to apply to the Board of Health to sanction all expenditure, no matter how trivial, proved extremely inefficient and time consuming.⁶⁵

64 7th Annual Report Scottish Board of Health 1925 [Cmd 2674] 1926. (HMSO) p.59.

65 G.C.H.C. Minutes 1918-32. S.R.A. C1/3/-. Stobhill Infirmary, of similar size to Mearnskirck, had taken only four years to erect at the turn of the century.

(d) INSTITUTIONAL TREATMENT

Criticism of the results of sanatorium treatment elicited two main responses from their defenders. The first, as has been seen, was to blame the lack of progress on the patients themselves. Too few patients, it was argued, were presenting themselves for treatment with their condition at an 'early' stage and too many were relapsing upon discharge into unsuitable home environments.⁶⁶ This being the case, the educative and segregative roles of institutions began to be stressed at the expense of the curative, just as they had been at Bridge of Weir in the early days of sanatorium treatment. These excuses will be examined later under the section dealing with the appraisal of institutional treatment. The second response was to experiment with all manner of putative remedies. Although fresh air and rest were to remain the cornerstones of tuberculosis treatment until well into the 1950's, they were often supplemented with other remedial measures, most notably chemotherapy and collapse surgery.⁶⁷

In his retiral speech in 1928, James Crocket, Superintendent at Bridge of Weir, was able to claim that,

66 The complaint that too few cases were referred at an early stage was not confined to tuberculosis specialists. Webster has argued that the demand for community medicine owed much to the fact that leading specialists in many fields of medicine felt that their credibility was being threatened by the paucity of early cases. C. Webster, 'The origins of social medicine in Britain.' Bulletin of the Society for the Social History of Medicine June 1986. p.53.

67 For a medical account of the historical development of pre-streptomycin chemotherapy and collapse-surgery, see R.Y. Keers, Pulmonary Tuberculosis : a Journey Down the Centuries. (1978).

there was no method of cure which they could adopt that they had not at least tried during these fifteen years, and he had visited most of the countries on the Continent to investigate and obtain first-hand evidence of reported cures. Many of these they had tried here, and have dropped on proving them to be unsatisfactory. But they could say that they had at least tried them.⁶⁸

The success of salvarsan in the treatment of syphilis spurred the search for a chemotherapeutic agent which could work against the tubercle bacillus in viro. Although treatment by tuberculin was out of favour, Philip continued to use it at Southfield and Crocket at Bridge of Weir. Another Scottish favourite was calcium. An Edinburgh physician had observed that the incidence of tuberculosis was low amongst workers in the local lime kilns, and recommended such work for the tuberculous.⁶⁹ Others used it as a specific remedy. E.E. Prest, for example, was administering calcium 'by every possible route' at Glenafton Sanatorium, Cumnock in the 1930's.⁷⁰ A more exotic, and potentially more harmful, therapy appeared with the advent of gold salts. Although it had long been known that gold inhibited the growth of the bacillus in vitro, such treatment did not become widespread until the Dane, Holger Moellgaard, developed sanocrysin, or, as it was more commonly known, gold-dust, in 1924. So popular did it become that the next ten years became known as the 'gold decade' in the history of the

68 Glasgow Herald April 2nd 1928. p.8.

69 W.J.B. Selkirk, B.M.J. 1908 p.1493.

70 W.A. Murray, Life Worth Living op cit. p.35. Lancet 1922 p.53. The value of such treatment was never experimentally proven. See P. D'arcy Hart, "Chemotherapy of Tuberculosis" B.M.J. 1946. pp.808-811, 849-855.

treatment of tuberculosis. Bridge of Weir became one of the first sanatoria in the country to use sanocrysin in 1926, often in combination with calcium and collapse therapy.

These to many of the patients had proved a great service; they had helped greatly to improve the statistics and given a much larger percentage of cases with the disease arrested or improved.⁷¹

Such enthusiasm, however, proved short lived, particularly once it became known that sanocrysin was a iatrogenic nightmare. Side effects included high fever, anorexia, nausea and vomiting. Its use could also lead to renal complications.⁷² The repeated failures to find an effective chemotherapeutic agent together with the controversy surrounding the use of particular favourites like tuberculin and sanocrysin, led to the discovery of streptomycin being met with much scepticism. One positive outcome of the sanocrysin debacle was that streptomycin was subjected to rigorous controlled testing before it was released for general use.⁷³

Both Bryder and Smith point to the widespread adoption of collapse therapy and thoracic surgery in the treatment of respiratory tuberculosis in the 1930's as being a direct response by the specialists to the charge that sanatoria were unnecessary. Surgery also offered a more scientific and glamorous approach to the management of the disease. Collapse therapy was in effect an

71 Glasgow Herald April 2nd 1928. p.8.

72 For details of the controversy surrounding the use of sanocrysin see Smith Retreat op cit p.149.

73 See Chapter Five below.

extension of conservative methods in as much as both were founded on the belief that the disease could be arrested if the lung was at rest. The most common surgical technique employed was artificial pneumothorax. This involved 'collapsing' or 'resting' the lung by injecting air into the pleural cavity. By so doing the infected lung was forced to contract. Periodic 'refills' were then administered for anything up to five years until the disease was arrested. The 'deceptive simplicity of the technique' led to its widespread adoption in the interwar years.⁷⁴ Again, its use was attended by a great deal of controversy, most of it focussing upon the question of when was the right time, if any, to induce collapse. Keers cites a leading Danish specialist who claimed that, 'the pneumothorax needle was the most dangerous weapon ever placed in the hands of a physician.' The technique was introduced into Bridge of Weir in 1915 for use on advanced cases. It caused 'occasional difficulties and one or two accidents' including the death of one female patient from a punctured lung. Crocket, however, believed that 'there is no doubt as to the value of pneumothorax for the advanced case.'⁷⁵ As late as 1957 another specialist still held that artificial pneumothorax 'was the greatest single advance in the active treatment of respiratory tuberculosis.'⁷⁶ Christopher Clayson, ex-

74 Keers, Pulmonary Tuberculosis op cit. p.158.

75 J.Crocket, 'Artificial pneumothorax in pulmonary tuberculosis.' E.M.J. Aug. 1920. p.113.

76 E.H.Hudson, 'Respiratory tuberculosis - diagnosis and medical treatment.' in Heaf (ed), Symposium. op cit. p.363.

superintendent at Lochmaben Sanatorium, has recently been defensive about its use, while at the same time drawing attention to its shortcomings.

If the patient was fortunate and good lung collapse was achieved without the limitation of intra-pleural adhesions, or if such adhesions when present could be easily divided, excellent results were obtained. If, however, treatment was persisted in despite indivisible adhesions, as it commonly was, disaster could and often did ensue. The wise physician was he who knew when to abandon the pneumothorax and seek another remedy.⁷⁷

Appraisal of the technique was virtually impossible because it was often employed to treat patients in all stages of the disease. The problem was compounded by the fact that the patients for whom it was suitable, 'early' cases with disease in only one lung, were also those who would most likely benefit by conservative methods of treatment. In an early report on the use of artificial pneumothorax in Scotland, Dr. Guy of Edinburgh admitted that,

a fair number of these cases were undertaken just to give the patient a chance : not that I expected very much out of it...the cases that we dealt with were of a very hopeless character.⁷⁸

Despite warnings that artificial pneumothorax could only be successfully applied to about five per cent of notified cases in Glasgow, collapse therapy was attempted on 221 patients out of the 437 discharged from Robroyston as late as 1944. It was tried on such a large number of unsuitable cases because it was claimed that 'a majority

77 Clayson, 'Tuberculosis' in Common Weal op cit p.395.

78 8th Annual Report Board of Health Scotland 1926 [Cmd 2881] 1927. p.68.

expect some active interference in their own illness.⁷⁹ It was also employed to such a wide extent at this time because, as there was a drastic shortage of beds during the war, it helped speed patient throughput.

The results of an investigation by the Joint Tuberculosis Council into the treatment of over 3,000 cases by artificial pneumothorax were 'disappointing...it has to be admitted that the results have been inconclusive.' The major constraint was a lack of suitable controls.⁸⁰ There is also evidence that physicians were more interested in technique than results. A 1941 survey established that of the 2,100 papers published on artificial pneumothorax between 1929 and 1939, less than five per cent were concerned with the results of treatment.⁸¹ One positive aspect of artificial pneumothorax from a public health standpoint, however, was that it often rendered sputum positive cases negative, although not indefinitely.⁸²

Phrenic paralysis was another common technique used to achieve lung collapse. Here, the phrenic nerve was crushed or severed, causing the diaphragm to rise and partially collapse the lower lung.

79 M.O.H. Reports Glasgow 1935 p.120. 1944 p.130.

80 'The results of artificial pneumothorax treatment - reports to the Joint Tuberculosis Council.' Tubercle Supplement Feb. 1937. The Joint Tuberculosis Council was established in 1924 to co-ordinate the research activities of the various groups working in the anti-tuberculosis field. According to Bryder it was handicapped by a lack of funding. Mountain op cit p.102.

81 Keers, Pulmonary Tuberculosis op cit. p.162.

82 In 90 per cent. of cases according to reports from Robroyston and Hairmyres. M.O.H. Report Glasgow 1935 p.122. M.O.H. Report Lanarkshire 1936. S.R.A. 10/12/2.

Although never as popular as in the U.S.A. or on the continent, major thoracic surgery became widespread in Britain from the 1930's, reaching its apogee during the next two decades. Thoracic surgery commenced in Robroyston in 1928 under James Taylor, a special unit being provided for him in 1934. A larger unit was opened in Ruchill in 1941 and another at Mearns Kirk in 1947 under Bruce Dick. The most common early technique was thoracoplasty; a mutilating operation, often performed in three stages, involving the removal of sections of the upper rib cage in order to effect a permanent collapse of the upper lung. Although specialists warned that it was not an operation of last-resort, patients needing to have been of sound constitution with one good lung, it was often performed as such. However, even when used on suitable cases,

it has an appreciable primary mortality, involves considerable pain and upset to the patient, and not a little anxiety to the operator.⁸³

Smith is particularly scathing of the amount of surgery that was employed on respiratory cases in the absence of any proof that it was effective.⁸⁴ Collapse therapy certainly had no discernible effect on mortality rates, while its use was accompanied by a great deal of pain and mutilation. To be fair, however, in the absence of a cure, surgeons felt that they had to do something.

83 J. Taylor and M.A. Foulis, 'Extrapleural thoracoplasty in tuberculosis.' G.M.J. Oct. 1934. p.137.

84 Smith, Retreat op cit p.147. He points out that Holland had one of the lowest tuberculosis mortality rates in Europe despite performing relatively little collapse therapy.

Although it was in the surgeons own professional interest to promote collapse therapy, there is evidence that patients also sought some active intervention in their own case, particularly as the alternative was often a long stay in a sanatorium. Surgical intervention was thus more common in the U.S.A. because paying patients wanted such treatment. That they wanted it, however, may have been the result of ill-informed ideas about its value. On the advent of effective chemotherapy, many chest surgeons who had developed their techniques on the tuberculous turned instead to cancer surgery.

The displacement of non-respiratory tuberculosis patients from the surgical wards of general hospitals into sanatoria coincided with a change in therapeutics. In contrast to the treatment of respiratory tuberculosis, treatment moved away from surgical intervention towards more conservative methods. As a result, treatment became much more prolonged. Although surgeons had been operating on non-respiratory cases since at least the 1880's, hence its designation as 'surgical tuberculosis', results were invariably disappointing. Patients were often left maimed or crippled, lesions might be exacerbated, while sepsis caused high mortality.

Pioneered by Henry Gauvain at the Treloar's Home for Crippled Children, Alton, conservative treatment was based upon the same principles as the treatment of respiratory tuberculosis - rest and fresh air. In addition, it was believed that sunlight would help the healing process. Splints and plaster casts were designed

to keep lesions immobile. In the case of spinal tuberculosis this involved plastering the trunk of the body then securing it on a trolley by straps. The patient could then be wheeled outside to enjoy the benefits of fresh air and sunlight. Such treatment could continue for years. Artificial sunlight or actinotherapy was employed in Scottish sanatoria to compensate for the lack of natural sunshine. Although surgical treatment was still carried out on some cases, notably on renal tuberculosis at Robroyston, conservative treatment retained its popularity well into the 1950's. Because most patients were children, they were more amenable to the extremely long time process involved.

It is difficult to evaluate the results of the treatment of non-respiratory tuberculosis. Mortality was declining fast, but so too was incidence. Conservative treatment must have saved the lives of those who had previously succumbed to post-operative sepsis, but, despite the praises heaped upon it at the time, it is far from clear that it was a major life saver, although it may have prevented some crippling and maiming. Whatever the case, non-respiratory tuberculosis could have been much more effectively reduced as a killer andcrippler of children if more effort had been put into prevention. Pasteurisation of milk, not achieved until the 1950s, and the protection of children from open cases of adult tuberculosis in the home would have precluded the need for a good deal of painful and expensive institutional treatment.

Relying primarily on the curative power of fresh air, institutional treatment was a long, expensive process. In Glasgow the average length of treatment for respiratory cases was 133 days in 1925-6, rising to 154 days by 1935-6. For non-respiratory tuberculosis the figures were 383 and 355 days respectively.⁸⁵ Averages, of course, conceal the extremes. Some patients left or died after a few days, others stayed for years. A boy with tuberculosis of the spine was discharged from Robroyston in 1930 having spent 4047 days (eleven years one month) in hospital.⁸⁶

The time and expense involved in treating tuberculosis in Glasgow Corporation hospitals occasioned a rare challenge to the dominance of 'scientific' medicine in 1933. In that year the British Homoeopathic Congress was held in the city. In his Presidential Address, Dr. W. Henderson Patrick, a Glasgow homoeopath, claimed that the Corporation could save £131,000 per annum if it adopted homoeopathic practices in its infectious diseases hospitals. Forty thousand pounds of this was to be saved in the treatment of tuberculosis. He subsequently wrote to the Corporation, repeating his claim and offering to demonstrate its validity if they would agree to allocate him fifty beds in one of their hospitals.⁸⁷ MacGregor, the M.O.H., persuaded the Health Committee to reject the offer outright, but their

85 M.O.H. Reports Glasgow.

86 Robroyston Tuberculosis Register G.G.H.B. Archives HB 36 1/1.

87 G.C.H.C. Minutes 16th Nov. 1933. SRA C1/3/90 p.154.

decision was overturned at a full meeting of the Corporation. MacGregor was then asked to investigate and report on the whole matter. His subsequent report legitimately criticised the financial assumptions underpinning Henderson Patrick's claims, but his advice that homoeopathy should not even be given a trial was founded on a less logical basis. His principal objection was on the grounds of responsibility. He protested that patients should not receive homoeopathic treatment because 'medical superintendents are legally responsible for errors of judgement or malpraxis in the conduct of their duties.' Such responsibility, however, did not prevent their using patients as guinea pigs for chemotherapy and surgery in the cause of scientific medicine. MacGregor concluded,

I cannot divest myself of the influence of my training and experience which make me suspicious of claims advanced with such certainty. Whatever advances the science of medicine has made in the treatment of infectious diseases, homoeopathic treatment can apparently always improve upon these by anything up to fifty per cent.⁸⁸

After much debate the Corporation left the decision on whether or not to take up the offer to MacGregor himself, thereby placing him on 'the horns of a dilemma.'⁸⁹

However uncomfortable his position, he decided to decline the offer and refused the homoeopaths access to the hospitals.⁹⁰

88 *ibid* 31st Jan 1935. SRA C1/3/92. p.764. Also Medical Officer 23rd Feb. 1935. pp. 75-77.

89 Medical Officer 6th April 1935. p. 132.

90 For details of the sometime acrimonious, sometime symbiotic relationship between allopathy and homoeopathy,

(e). DOMICILIARY TREATMENT

This thesis has concentrated, just as attention was at the time, on the provision of institutional treatment. At any given time, however, the vast majority of persons suffering from tuberculosis were 'treated' in their own home. Thus, of the 22,651 registered cases of respiratory tuberculosis residing in Scotland in 1930, only 2,943 (thirteen per cent) were in hospitals or sanatoria. Only 1,644 of the 16,987 cases registered as suffering from non-respiratory tuberculosis (less than ten per cent) were undergoing institutional treatment.⁹¹ In Glasgow, with its greater number of beds per head of population, twenty-five per cent of surviving cases were being treated in institutions in 1930.

Initially, under Section 16 (1)(b) of the National Insurance Act, the L.G.B. (Scotland) had to approve the domiciliary treatment of each individual insured person. However, given the numbers involved, this order was rescinded in 1914, Medical Officers thenceforth being obliged only to closely supervise and attend all such cases. In order that domiciliary treatment could be undertaken at all, the Public Health Act had to be ignored in a good many cases, particularly in towns and cities. Under the Act, any person who was in 'a room occupied by others besides those necessarily in attendance on him' should have been removed to a place of

see Phillip A. Nicholls Homoeopathy and the Medical Profession (1988)

⁹¹ 2nd Annual Report Department of Health for Scotland 1930 [Cmd 3860] 1931. Appendix No. VI. p.178.

isolation.⁹² In a city like Glasgow, where sixty-three per cent of the population lived in houses of two rooms or less in 1926, this part of the Act was clearly unenforceable with respect to tuberculosis. In 1920, for example, 9,818 domiciliary cases were sharing their small city homes with 52,404 other people.⁹³

In rural areas, where institutional provision was on a lesser scale, patients were often provided with wooden shelters which allowed them to sleep in the garden. Resembling bus stops, such shelters could be purchased for £29 in 1921, double their pre-war price. Aberdeen County Council possessed sixty-two such shelters after the War, while a further four were owned privately. It was reported that one man had continually occupied his shelter for eleven years, another three spartans had slept in theirs for eight. Not everyone, however, was so enamoured of living in a shelter.

Considerable difficulty is occasionally experienced in getting patients to use their shelters properly. Surprise visits are made, and shelters are sometimes found to have all the windows and doors closed.⁹⁴

Whistles and truncheons were advertised in the British Journal of Tuberculosis for those occupying such shelters out in the country to allay any fear of attack from 'wild animals'. Plans mooted to create a colony of such shelters in Aberdeen were dropped as it would have

92 M.O.H. Reports Glasgow 1914-19. p.80.

93 ibid 1920. p.78.

94 Report by Tuberculosis Medical Officer Aberdeen County 1921. p.31.

necessitated the unacceptable expense of employing a warden.

Local Authorities were originally allowed 5/- a week against the Tuberculosis Maintenance Grant to treat domiciliary cases. This was doubled to 10/- in 1919. This was used to offset the cost of visitations by nurses and officers as well as to supply such extras as milk, butter and eggs which were deemed to be beneficial in the treatment of tuberculosis. Medical Officers were also allowed to supply beds and bedding to necessitous cases.⁹⁵

Insured persons were treated by their own general practitioner. The main difficulties facing the doctor in working-class districts were 'those arising from and forced upon him by the economic position of his patients.'⁹⁶ Pre-clinical, 'early' cases, even if identifiable, could not be persuaded to remain under observation because most working-class people could not afford to be ill. In the absence of 'treatable' patients, the practitioner's role was reduced to alleviating symptoms in advanced cases, that is, to prescribing cough bottles.

Despite the rapid expansion of bed provision in the 1920's, most tuberculosis cases continued to reside in their own home. This clearly made a mockery of the claim

⁹⁵ This provision was never applied very generously. In Glasgow, for example, medical extras were supplied to only thirty-one cases in 1929, while twenty-four others received beds and bedding. M.O.H. Report Glasgow 1929 p.133.

⁹⁶ W.F. Jackson, Manchester G.P., Tubercle Dec. 1937. p.114.

that institutions were performing a significant isolatory function. It was argued, however, that their chief value lay in educating patients to successfully practice the sanatorium ideal at home. As will be seen, this claim was also rather spurious.

(f). REHABILITATION AND AFTER-CARE

Critics of sanatorium treatment pointed out that it was useless to treat even 'early' cases of respiratory tuberculosis if the patient, upon discharge, returned to live in a poor home environment and/or could not secure suitable employment. In response, a good deal of ink was spilt devising plans to develop rehabilitation facilities and provide for the after-care of sanatorium treated patients. As can be seen from Figures 3(ii) and 3(iii), village settlements, technical education facilities, training colonies, care committees, social welfare agencies etc. came to be regarded as essential features of the ideal local authority tuberculosis scheme. However, left, for the most part, to voluntary effort, after-care was almost non-existent in Scotland before the Second World War. Only five out of the fifty-five tuberculosis schemes operating in Scotland could boast of an after-care committee in 1943. Even then,

some were synonymous with the Public Health Committee, which means they are not Care Committees in the real sense of the term.⁹⁷

97 C. Clayson, 'Modern methods in preventive and social aspects of tuberculosis.' E.M.J. 1943. p.216.

Provision for after-care was probably worse in Scotland than in England, where, according to Bryder, it was relatively good in at least London and Lancashire, because the 1926 Public Health Act, which allowed grants of between £2 and £5 per 1,000 of population for after-care, did not apply north of the border. As late as 1939, a leading tuberculosis specialist complained that in Britain as a whole;

the building of vast sanatoria, without adequate and effective rehabilitation schemes is a waste of public money, because the ultimate result of sanatorium treatment depends in over 80 per cent of cases on the social and domiciliary conditions to which the patient returns.⁹⁸

Bulstrode had pointed out in his earlier report on sanatoria that they might be effective if patients could be prevented from returning to unsuitable home conditions. He believed that sickness benefit would secure this end. In the 1920's an insured worker suffering from tuberculosis would receive 15s per week for the first thirteen weeks of illness (later extended to twenty-six weeks) and 7/6d per week thereafter. Dependent wives received nothing at all. As Bryder points out, such 'benefits' were well below Rowntree's primary-poverty level. Ex-servicemen, however, were more favourably placed, receiving 37/6d per week, as well as allowances for wives and children.⁹⁹

Village settlements, pioneered by Sir Pendrill Varrier-Jones at Papworth in Cambridgeshire in 1917, were

⁹⁸ F.R.G. Heaf, Tubercle 1939. p.353.

⁹⁹ Bryder, Mountain op cit p.87.

seen as one possible solution to the problem of patients who could not withstand the vicissitudes of normal life after undergoing a period of sanatorium treatment.

Working on the principal that there was no such thing as *le* a cure for respiratory tuberculosis, Varrrier-Jones designed the village settlement for patients to live in permanently, often with their families, and work in industrial workshops at trade union rates of pay.¹⁰⁰ The Second Astor Report on tuberculous ex-servicemen recommended the establishment of ten such village settlements in Britain and that £1.25 million should be set aside to finance them. The Scottish Board of Health reckoned that it would get one, or even two, of these, each with provision for 200-250 men and their families.¹⁰¹ However, a conference of all the major local authorities which was to have been convened to discuss the matter had to be postponed in 1920 as there was no money forthcoming from the Treasury. The following year it was postponed indefinitely.

Meanwhile, Glasgow Corporation had commissioned an inquiry of its own into the feasibility of retraining the tuberculous in permanent settlements. The 785 ex-servicemen residing in the city who had contracted respiratory tuberculosis during the war were used as a reference group. As noted, these men were at a distinct advantage to the tuberculous civilian by dint of the

100 L. Bryder, 'Papworth Village Settlement - A unique experiment in the treatment and care of the tuberculous?' Medical History 1984. pp.372-90.

101 Scottish Board of Health Circular 1X April 1920.

greater financial security afforded by pensions and allowances. Even so, fully 658 were excluded on either medical or social grounds. A good number of the remaining 127 were fit enough to pursue their former occupation, while the remainder were sceptical as to the value of retraining. The Report concluded that a tuberculosis colony or village settlement might offer permanent employment under sheltered conditions but it would only benefit a small minority of phthisical patients.

The Village Settlement as a method of treating the individual case is admirable; as a public health investment it might not justify its cost. For these reasons the proposal must be regarded from a strictly tentative and experimental standpoint.¹⁰²

Varrier-Jones was able to make Papworth pay, but apart from a similar scheme financed by the Red Cross at Preston Hall in Kent, village settlements never really caught on, particularly with local authorities. One objection to spending public funds on such schemes was that the tuberculosis victim was placed in a privileged position compared to others suffering from chronic diseases. The most frequent criticism, however, was that they benefited few, while being very expensive to erect and maintain. Nevertheless, in 1921, while Papworth charged 63/- per head per week for the treatment of four Glasgow ex-servicemen, Hairmyres was charging 66/6d.¹⁰³

The only two 'colonies' established in Scotland were Polton Farm, pioneered by Philip in Edinburgh in 1910,

¹⁰² G.C.H.C. Minutes Sept. 1922. S.R.A. C1/3/67. pp.2516-2527.

¹⁰³ G.C.H.C. Minutes Feb. 1921. S.R.A. C1/3/64. p.858.

and the Hairmyres workshops at East Kilbride.¹⁰⁴ The former had places for only twenty colonists who were subsidised at £40 per head per annum by Edinburgh Corporation.¹⁰⁵ Hairmyres, unlike Papworth, was intended for rehabilitation and retraining rather than for permanent settlement. As the majority of patients were ex-miners, it was decided to offer 'industrial' training as well as market gardening. In the event four workshops were provided; motor repairing, wood-working, boot repairing and basket making. There were places for 36 trainees in all for whom driving lessons were also provided. Owing to the longer period of residence required for retraining, each trainee was paid 5/- a week following a month's probation. As the superintendent, James Johnstone, pointed out, 'this was certainly not an excessive remuneration', although he did add that as maintenance charges were £3 3/- per week, they were actually receiving £3 8/-.¹⁰⁶ Given its limited scope, the scheme was fairly successful. Despite being 'severely handicapped by trade recession', thirty-seven out of the sixty trainees discharged in 1927 were working in the trade they had been trained for, the majority coming from

104 For non-respiratory cases, there was also the Astley Ainslie Hospital which was attached to the Edinburgh Royal Infirmary. This hospital was a pioneer of rehabilitation in Great Britain. Opened in 1923, with Sir Robert Philip as one of its governors, the hospital attempted to rehabilitate many patients crippled by tuberculosis. C. Smith, Between the Streamlet and the Town : A Brief History of the Astley Ainslie Hospital. (Edinburgh 1989).

105 Annual Report Edinburgh Public Health Department 1936. S.R.O. HH. 62-57. p.26.

106 B.J.T.B. 1928. p.113.

the motor repair shop.¹⁰⁷ Such success did not, however, prevent the abandonment of a similar scheme proposed for Mearnskirck in 1930 despite the fact that it had been 'urgently required' a decade earlier. Although much talked about, very little was actually done to rehabilitate the fortunate few who survived the sanatoria.

There were, in addition, other half-hearted attempts to secure light work for discharged sanatorium patients, particularly ex-servicemen. The Board of Health wrote to all local authorities in 1924 urging them to co-operate with all local agencies to find suitable employment for men whose working capacity had been impaired by tuberculosis. At the same time, however, the Ministry of Pensions stressed that the success of aftercare in cases of tuberculosis depended primarily on personal effort.¹⁰⁸ Although Glasgow Corporation found employment for a number of such men in its Cleaning, Parks and Water Departments, the lot of the ex-sanatorium patient was not to be envied. In times of high unemployment, the physically impaired were generally marginalised from the labour force.¹⁰⁹ The problems of the tuberculosis patient were compounded by the fact that employers and employees were often afraid of the disease. The reality, therefore, for the majority of discharged patients was not sheltered

107 9th Annual Report Scottish Board of Health 1927 [Cd 3112] 1928. p.97.

108 Glasgow Herald Feb. 5. 1924 p.8.

109 See, N. Whiteside, 'Counting the cost : Sickness and disability among working people in an era of industrial depression 1920-39.' Economic History Review. 1987. pp.228-246.

employment, but rather dependency on family and friends, sickness benefit, the Poor Law or, after 1929, the Public Assistance Committee.

A more positive step to facilitate the after-care of the tuberculous was taken in the late 1920's when some local authorities in Scotland began to give priority to ex-patients on housing waiting-lists. Eventually all families living in overcrowded conditions with a person suffering from tuberculosis were accorded such priority. Lanarkshire County Council granted a subsidy to facilitate their rehousing scheme. However, in 1933 it was reported that as few as twenty-nine patients were allocated a house out of two hundred applicants, and only fourteen of them received the subsidy. No such measures were adopted in Edinburgh until 1943, when the housing committee allocated one in every twelve available houses for notified respiratory tuberculosis patients in response to a drastic shortage of hospital beds.¹¹⁰

Glasgow Corporation began a scheme to rehouse overcrowded families containing an active case of tuberculosis in 1929.¹¹¹ Ten per cent of the Corporation's new 'intermediate' houses were set aside for such families.¹¹² They were thus accorded priority on the massive housing waiting-list provided they could pay an economic rent. Despite the lack of subsidy, some 1,849

¹¹⁰ Lanarkshire County M.O.H. Report 1936. S.R.A.

10/12/2. Tait, A Doctor and Two Policemen op cit p.64.

¹¹¹ The initiative did not come from the M.O.H., but from a member of the Health Committee, Councillor Forgen.

G.C.H.C. Minutes. 28th Sept. 1927. SRA C1/3/77.

¹¹² M.O.H. Report Glasgow 1932 p.122.

families had been rehoused by 1948. Noble as this effort was in affording a greater degree of protection for the victim's family, rehousing an average of only ninety families a year at a time when over 2,000 persons per annum were being notified as suffering from respiratory tuberculosis alone, was merely scratching at the surface of the problem in a grossly overcrowded city. Given that the waiting list for Corporation houses was closed in 1933 with 80,000 names on it, tuberculosis was one of the few passports available to the majority of Glaswegians seeking larger accommodation.¹¹³ As will be seen in the next chapter, one unforeseen consequence of the rehousing policy in Glasgow was the creation of tuberculous 'ghettos' in the new housing estates. This may have had unfortunate consequences for the victims' new neighbours.

(4). APPRAISAL

The results of the treatment of respiratory tuberculosis in both Scotland and Glasgow can be determined by expressing the death-rate as a percentage of the notification rate. (see Fig. 3 (iv)).

Fig. 3(iv) Ratio of deaths to notifications¹¹⁴

<u>Quinquennia</u>	<u>Scotland</u>	<u>Glasgow</u>
1919-23	53 %	57 %
1924-28	54 %	58 %
1929-33	54 %	56 %
1934-38	57 %	56 %

113 J. Butt, 'Working class housing in Glasgow.' in I. Mac Dougall (ed) Essays in Scottish Labour History (Glasgow 1979) p.165.

114 Registrar General Scotland Annual Reports.

Although this is a crude guide for evaluating the efficacy of treatment, the exercise does strongly suggest that tuberculosis institutions did not save lives. Incidence rates were declining at the same pace as mortality rates. Had institutional treatment worked, one would have expected the ratio to have declined in the 1930's when so many beds were available. Such use of notification rates, however, is problematic. As Bryder points out, there was probably a good deal of under-reporting of the disease as evinced by the large number of cases only notified at or near death. Such practices varied from area to area and rendered comparison in terms of notification statistics tenuous.¹¹⁵ There is also, however, the more serious problem of over-reporting. The notification statistics employed in Fig. 3 (iv) refer to all notifications of respiratory tuberculosis in Scotland and Glasgow for the relevant years. These were used because they are available over a longer time-span. However, if one uses the statistics referring solely to 'confirmed notifications', an even bleaker picture can be drawn. In 1930, for example, only 4,028 out of 5,671 notifications registered were subsequently confirmed by a M.O.H. as definitely suffering from respiratory tuberculosis. Using the revised figure, the ratio of deaths to notifications jumps to seventy-five per cent. Such a ratio is more in accord with results obtained from other investigations.

¹¹⁵ Bryder, Mountain op cit. p.103-9.

It would appear, from calculations based on figures extracted from Glasgow Corporation's Tuberculosis Register, that, of all cases registered between 1910 and 1930, over eighty per cent were dead by the latter date. Most survivors would have been recent registrations.¹¹⁶ Seventy-three per cent of all sputum positive cases notified in Glasgow between 1935 and 1938 were dead within five years of notification, eighty-three per cent after nine years.¹¹⁷ For Britain as a whole in 1937, it was reported that sixty per cent of all cases of adult phthisis were dead within five years of notification. Other data suggests that mortality rates were as high as eighty or ninety per cent five years after institutional treatment.¹¹⁸ One of the rare long-term surveys on sanatorium treatment, undertaken in Reading between 1914 and 1940, concluded that,

differences in the survival of patients experiencing sanatorium treatment, and patients not doing so, appear to be transient only.¹¹⁹

One organisation with a straightforward pecuniary interest in the survival prospects of sanatorium treated patients was the Prudential Insurance Company. Their actuarial statistics revealed that the mortality rate for all discharged patients from sanatoria, that is for

116 M.O.H. Reports Glasgow 1911-30.

117 Report of the Scottish Health Services Council's Committee on Tuberculosis (Edinburgh 1951) (HMSO) Appendix 14a, p.60.

118 Tubercle June 1937. p.42. Linda Bryder, 'The King Edward VII Welsh Memorial Association and its policy towards tuberculosis.' The Welsh History Review Vol. 13(2) 1986. p.200.

119 W.H. Tattersall, 'The survival of the sputum positive consumptive' Tubercle June 1947 p.251.

supposedly 'early' cases, was fifty times greater than that of a control group of first class lives. Even if they survived five years, the mortality rate was still twenty-five times as great.¹²⁰

The Board and Ministry of Health were understandably coy about conducting a full-scale, official appraisal of sanatorium treatment.¹²¹ As late as 1932, A.S. MacNalty was still claiming that,

early diagnosis, careful selection (frequently after a period of hospital treatment) and a period of treatment adequate to the needs of each individual are indispensable. Sanatorium treatment will then yield excellent results.¹²²

The Scottish board of health had attempted earlier to justify the large sum spent on institutional treatment on humanitarian, isolationary and educational grounds.

120 Otto May, 'Tuberculosis in relation to life insurance' Lancet Feb. 27th 1937.(1) pp.493-6. These figures did not deter the Prudential from offering the tuberculous life insurance. They could do so by offering policies with a very heavy reducing lien - often as high as ninety per cent - with the incentive for the policyholder that the longer he lived the less would be the reduced lien. They justified such a practice by claiming that it helped foster confidence amongst sanatorium treated patients. See also, Tubercle April 1937. p.329.

121 The only full-scale public inquiry called to investigate the operation of a Tuberculosis Scheme, conducted in Wales and Monmouthshire in 1938, was highly critical of the whole service, and especially of its concentration on institutional treatment. J. Graham Jones, 'The Committee of Inquiry into the Anti-Tuberculosis Service in Wales and Monmouthshire.'

Transactions of the Honourable Society of Cymmrodorion 1987. pp.193-201. Bryder, 'The King Edward VII Welsh Memorial Association' Welsh History Review 1986. op cit. 122 MacNalty, 'Report on Tuberculosis 1932' op cit. p.99.

About eighty-five per cent of the expenditure of Scottish local authorities is incurred in the maintenance of sanatoria and hospitals. The justification for the expenditure on the tuberculosis schemes depends mainly on the justification of the expenditure on institutional treatment. In regard to the non-pulmonary forms of the disease, there can be no doubt that the schemes are doing most excellent work....Few will dispute the desirability, both on humanitarian grounds and from the point of view of public health, of segregating the advanced case of tuberculosis of the lungs. The nursing attention required by the patient can in most cases only be given in hospital, and, in any event, the average small home is no place for the 'open' or infective case. In addition to its restoration work, the sanatorium has an educational function which it carries out with increasing success. Not only is the patient taught by precept and example the proper mode of conducting his life if good health is to be secured and maintained, but he has impressed upon him the duty of considering others. A return to cramped and depressing home conditions may go far in many cases to ruin the results achieved, but even at the worst the lesson of the sanatorium is never entirely lost.¹²³

As well as the unsuitability of patients and the complaint that they did not stay in for sufficient duration, the third excuse offered to account for the dire results of institutional treatment was that patients often relapsed upon returning home to live in unsatisfactory environments. Thus, not only did National Insurance and the Tuberculosis Schemes fail to satisfy the first of Bulstrode's criteria, the attraction of 'early' cases, they also failed to satisfy the last two.

Why, then, could suitable cases not be secured in sufficient numbers? As most cases were referred to the dispensary by general practitioners, much of the blame

¹²³ 10th Annual Report Scottish Board of Health 1928.
[Cmd 3304] 1930. (HMSO) p.201-2.

was laid at their door. An Edinburgh Tuberculosis Officer complained in 1937 that;

Still far too many patients when first seen are found to suffering from the disease in an advanced form and attention has been drawn to the melancholy fact that this fault is not always due to ignorance, carelessness or neglect on the part of the patient. There can be no doubt that the first and most important step in the diagnosis of pulmonary tuberculosis is to know when to suspect it, but it appears from the experience of the tuberculosis dispensary practice that too often the presence of tuberculosis is not suspected by the practitioner until it is too late.¹²⁴

It was also argued that practitioners were unfamiliar with the symptoms of incipient tuberculosis because, as the treatment of the disease was separated from mainstream medicine, they would not have encountered any cases in the teaching hospitals.¹²⁵ This was not the case in Edinburgh and Glasgow, however. As has been noted, Philip's course on tuberculosis was well attended, while all Glasgow medical students had to complete a compulsory course on the disease before entering their final examinations. This included a number of visits to an east-end dispensary and Bridge of Weir Sanatorium. In any event, it is unlikely that a general practitioner would have long remained ignorant of tuberculosis when it was so prevalent. It has also been shown that the failure to detect early cases could not be blamed to any significant extent on the contumacy of practitioners hostile to the

¹²⁴ Annual Report Edinburgh Public Health Department 1937. S.R.O. HH 62-57. p.25.

¹²⁵ D.P. Sutherland, Tubercle Aug. 1927. p.511. Also, W.Stobie, Tubercle May 1929. p.401. Argyll's M.O.H. suggested that general practitioners be given a bounty of 5/- per registered early case to encourage more referrals. County M.O.H. Reports 1911 SRO HH 62-43. p.17.

public health department. In Glasgow doctors referred a good many cases who were not, in fact, tuberculous. In Scotland as a whole, moreover, thirty per cent of cases registered in 1930 were subsequently found not to be suffering from the disease.

One major difficulty in securing incipient cases was the insidious nature of the disease. 'Early' cases were often symptomless, which made it very difficult to persuade patients that they needed to enter a sanatorium, particularly if it entailed financial loss or threatened job security.

It must be recognised that the clinical diagnosis of tuberculosis in its early stages is an exceedingly difficult matter; even for the expert it may require a period of close observation under specially favourable conditions and preferably in a residential institution.¹²⁶

Small centres of infection were extremely difficult to locate, even post-mortem.¹²⁷ Most cases were not diagnosed until the bacillus was present in their sputum, by which time, it was claimed, they were beyond the remedial power of sanatoria. Doctors, therefore, had to rely on clinical examination and radiography. If the case was symptomless, he was dependant upon the latter. However, although substantial advances were made in radiography in the interwar years, x-rays of the lung were notoriously difficult to interpret. As late as 1959, Henry Garland, Professor of Radiology at Stanford University, estimated that one out of ten patients

¹²⁶ MacNalty, 'Report on Tuberculosis 1932'. op cit. p.64.

¹²⁷ J.S. Martin, Tubercle Aug. 1927. p.504.

diagnosed by x-ray as having respiratory tuberculosis were not, in fact, suffering from the disease. In interpreting x-rays, he claimed that,

one experienced physician is apt to disagree with another in about a third of all cases and that they contradicted their own diagnosis in about one case in five when shown the same pictures again.¹²⁸

Perhaps the anxiety to secure 'early' cases often led to sanatorium beds being occupied by the non-tuberculous. If this was so, it is hardly surprising that some 'early' cases responded so favourably to sanatorium treatment. One Glasgow physician admitted in 1913 that in ten years experience he had 'often diagnosed tubercle where no phthisis followed'. His conscience, however, was clear because;

The diagnosis of tubercle (early and presumptive) led to the adoption of a hygienic physiological life. This in turn arrested the tubercle, or if no tubercle really existed it often corrected the error of health, and the patient benefited in either case.¹²⁹

The main reason why so few suitable cases were attracted, however, must have been economic. Even the insured working-class would have hesitated before consulting their doctor with such vague symptoms as persistent cough, listlessness, weight-loss or dyspepsia. They may have been even more hesitant if they suspected that they might have tuberculosis for, despite all the propaganda, the disease was still understandably regarded as being

128 Quoted in, B. Inglis, The Diseases of Civilisation (1981). p.154.

129 A Gibson, 'The General Practitioner's position in relation to pulmonary tuberculosis.' G.M.J. 79. 1913. p.420.

invariably fatal. There was, moreover, still a great stigma attached to the disease, both because of its infectious nature and its association with poverty. A Manchester general practitioner in a working class district listed four main reasons why he believed patients were reluctant to seek treatment;

- i) temporary improvement in general health;
- ii) fear of social stigma and segregation;
- iii) the prospect of supervision or threatened invasion of their home by the authorities;
- iv) most importantly, the fear of losing their work with resulting loss of income.¹³⁰

If economics was the principal reason why there were few working class patients in sanatoria, it was also the main reason why patients did not stay to complete their prescribed period of treatment. Fully forty-one per cent of all patients discharged from Hairmyres in 1936 left because of 'domestic and financial' pressure, while a further sixteen per cent may have 'absconded' for similar reasons. Only thirteen per cent left having fully completed their treatment.¹³¹

The most striking feature is the number of patients who were discharged for domestic and financial reasons. If the patient is a breadwinner, he is naturally anxious about his family. To remove this great obstacle to successful treatment, would it not be possible for the local authority to grant increased financial assistance, probably by means of a Care Committee?¹³²

Premature dismissal was not, however, confined to male breadwinners. In 1927 it was reported that, although

¹³⁰ Jackson, Tubercle 1937. op cit p.114.

¹³¹ M.O.H. Report Lanarkshire 1936. SRA 10/12/2.

¹³² ibid.

admitted in similar numbers, the percentage of females dying in institutions was twenty-eight per cent while the corresponding figure for males was fifty-two per cent.¹³³ This would indicate that females were less likely to remain in hospital with disease in an advanced stage. In Hairmyres the average length of stay for male patients in 1933 was 488 days, while females only stayed on average for 229 days.¹³⁴ Want of health insurance is most likely to have been responsible for the difference. Push factors must also have played a part in accounting for early dismissals. If a relatively liberal sanatorium such as Hairmyres could not retain patients, the situation at Ruchill and Robroyston must have been even worse.¹³⁵

Therefore, even given the unlikely assumption that sanatoria could cure respiratory tuberculosis, it was absurd to so treat working-class patients without supplying some kind of financial security in the form of incentives to seek early treatment and the provision of adequate after-care. However, for the Board of Health to have allowed such payments would have left them open to claims from a host of other groups suffering from chronic disabilities.

What of the prophylactic role claimed for the tuberculosis hospitals? By segregating advanced cases, was the public exposed to less infection? The answer must be a very qualified yes. Given, however, that the vast

¹³³ 9th Annual Report Board of Health Scotland. 1927 [Cmd 3112] p.178.

¹³⁴ M.O.H. Report Lanarkshire 1933. SRA 10/12/1.

¹³⁵ For inmates' opinions on the various institutions, see 'Chapter Six - The Victims' below.

majority of victims remained outwith institutions at any one time and that many terminal cases discharged themselves to die at home, the preventive effects could not have been great.

It will be noted that among the reasons for dismissal 'own or parents' request' accounts for a considerable proportion of cases. Amongst advanced cases (a third of whom left at their own request) it happens not infrequently that the patient who feels that he is not making progress expresses a desire to go home and will not be persuaded to remain, however unsuitable the home conditions.¹³⁶

During the 1930's, moreover, when Glasgow had access to more tuberculosis beds than ever before, incidence-rates in the city remained stationary. During the Second War, when yet more beds were made available, notifications soared. Furthermore, as late as 1947, fifteen per cent of all respiratory tuberculosis deaths in Scotland were not notified while alive. A further seventeen per cent were only notified within three months of death.¹³⁷ The segregative effects on almost a third of all cases would thus have been negligible. The position in rural areas was even worse. In Berwick, for example, over forty per cent of all cases registered between 1922 and 1936 were dead within six months of notification.

It is also doubtful that a period of sanatorium treatment was necessary to educate sputum-positive cases to control their expectoration or protect their family. It is difficult to see how patients could do so without a

¹³⁶ Ruchill Annual Report in M.O.H. Report Glasgow 1929.
p.374.

¹³⁷ Report of S.H.S.C.'s Committee on Tuberculosis op cit
p.31.

room of their own, something of a rarity in Scotland. As Wilkinson pointed out in 1911, it was never satisfactorily explained why a spell of institutional treatment was essential in teaching a patient to cover his mouth with a handkerchief when coughing. As for the opportunity of continuing open-air therapy at home, Elizabeth McVail highlighted the impracticality of doing so in the small tenement houses of Glasgow.

A man may be anxious to follow out sanatorium regulations on his return home, but in a house of two apartments with a common living-room, his relatives do not appreciate having to participate in open-air treatment, and the result is that after being told repeatedly to close the window he forgets to open it. Almost invariably, when the results were at all satisfactory the house had not more than one or two occupants per room.¹³⁸

Another Glasgow investigation of 1916 (Fig. 3(v)) revealed that no amount of education could expand a tenement.

Fig.3(v) Sleeping accommodation per 100 patients before and after institutional treatment;¹³⁹

	<u>Room to self</u>	<u>Persons in same bed</u>	<u>In same room</u>
Before	24	96	84
After	33	70	115

Percentage of cases with through and through ventilation;

Before	64
After	67

An experienced Tuberculosis Officer reported in 1931 that '(advanced) cases do not practice the hygienic method of

¹³⁸ E. McVail, Reports to L.G.B. (Scotland) on Glasgow 1911 op cit p.49.

¹³⁹ M.O.H. Report Glasgow 1916. p.83-84.

living that they were taught in the institutions.'¹⁴⁰ The stress placed on the educative role of sanatoria was brutally exposed for the hypocrisy it was by H.O. Blanford in 1923;

The fallacy of the very idea lies in the fact that it is useless to learn how to live if you are going to die of pulmonary tuberculosis.¹⁴¹

(5). THE COST OF INSTITUTIONAL TREATMENT

It was claimed that expenditure on tuberculosis in Great Britain was as high as £80 million per annum in 1933.¹⁴² Whatever the accuracy of this unsubstantiated claim, treatment, being long-term, was undoubtedly expensive. Despite vigorous financial control, the expansion in the number of tuberculosis beds proved extremely costly. Spending on treatment and control of the disease in Scotland increased six-fold during the decade 1918-28, from £100,000 to £600,000 per annum.¹⁴³ By far the largest part of this expenditure, eighty-five per cent by 1928, was accounted for by institutional treatment. In 1931 it was reported that tuberculosis was responsible for fifty-two per cent of the total amount expended on the four major public health services in Scotland; mother and Child Welfare, the School Medical Service and Venereal Disease were responsible for twenty-

¹⁴⁰ Rae, 'Local and general problems' E.M.J. 1931. op cit p.155.

¹⁴¹ H.O. Blanford, 'The education of the tuberculous patient.' B.J.T.B. 1923 p.24.

¹⁴² G. Tippet in Medical World June 9th 1933 p.64.

¹⁴³ 23rd Annual Report Local Government Board Scotland 1918 [Cd 9020] (HMSO) 1919. p.viii. 10th Annual Report Scottish Board of Health 1929. [Cmd 3304] 1930. (HMSO) p.200.

three, eighteen and seven per cent respectively. In the County of Aberdeen tuberculosis was responsible for fully seventy-two per cent of total public health expenditure.¹⁴⁴

The national figures on spending, however, do not break down the cost of treatment as allocated between respiratory and non-respiratory tuberculosis. Nor do they adequately account for capital costs. Fortunately, detailed costs are available for the treatment of the disease in Glasgow. In line with the rest of the country the total cost of treating tuberculosis in Glasgow escalated during the immediate postwar years and did not decline during the deflationary period thereafter. Fig. 3(vi) shows the maintenance costs for the years 1911, 1915, 1918, 1921 and 1926.

Fig. 3(vi) MAINTENANCE COSTS GLASGOW 1911-26.¹⁴⁵

<u>YEAR</u>	<u>EXPENDITURE</u>	<u>INCOME</u>	<u>ASSESSMENT</u>
1911	£ 1,004	£	£ 1,004
1915	69,967	33,267	36,349
1918	119,409	65,603	53,806
1921	196,599	92,300	104,399
1926	197,251	98,002	99,249

In 1923 the Board of Health imposed a ceiling of £189,000 on all expenditure eligible for the Tuberculosis Maintenance Grant. The Corporation had submitted earlier an estimate of £224,000.¹⁴⁶ It must be borne in mind that these are maintenance costs only and are exclusive of capital costs of which the Corporation paid a far greater

¹⁴⁴ Rae, 'Local and general problems' E.M.J. 1931 op cit p.152.

¹⁴⁵ GCHC Minutes 1911-26. SRA C1/3/-.

¹⁴⁶ GCHC Minutes June 1923. SRA C1/3/69.

proportion. Loan charges on capital expenditure were allowed, however, against the Maintenance Grant.

Fig. 3(vi) represents a breakdown of the maintenance costs of the Glasgow scheme in 1926. As can be seen eighty-four per cent of expenditure was accredited to institutional treatment. The £11,000 credited to "other income" mostly came from the Ministry of Pensions for the treatment of ex-servicemen, the remainder being made up from gifts and legacies. Unlike England, where patients were often asked to pay for treatment and, indeed, following the issue of a Circular in 1924, were means tested for payment, treatment in Glasgow was free.¹⁴⁷

Fig. 3(vii) COST OF GLASGOW'S TUBERCULOSIS SCHEME 1926¹⁴⁸

	£
Domiciliary treatment, nurses salaries etc.	11,932
Dispensaries	20,563
Sanatoria and hospitals belonging to Corp. used exclusively for tuberculosis.	95,256
Sanatoria and hospitals belonging to Corp. used for tuberculosis and other diseases.	47,000
Sanatoria jointly administered by Corp. and other Local Authorities.	600
Sanatoria and hospitals not belonging to Corp.	
Other Local Authorities	£6,700
Poor Law Authorities	12,000
Voluntary Associations	13,200
	<u>31,900</u>
TOTAL COST	<u>197,251</u>
Estimated Income	
Government Grant	87,000
Other Income	11,000
	<u>98,002</u>
Net Charge Against Rates	<u>99,249</u>

¹⁴⁷ Ministry of Health Circulars 257 (1921) and 479 (1924).

¹⁴⁸ 'The Glasgow tuberculosis scheme - 1926.' S.R.A. LP/135. op cit.

Glasgow's entire Public Health Department budget was approximately £456,000 in 1926.¹⁴⁹ In maintenance costs alone, therefore, tuberculosis was responsible for forty per cent of total expenditure. At the time the Department was responsible for; general sanitation; child welfare; control of all infectious diseases; infectious diseases hospitals; the working of the port local authority; air purification; and sundry other branches. Whereas in 1911 the Corporation was spending £3,111 per annum on child welfare and only £1,004 on tuberculosis, by 1919 spending on child welfare had risen to £11,321 while expenditure on tuberculosis had rocketed to £119,409.

The 1929 Local Government Act abolished the Tuberculosis Maintenance Grant. Tuberculosis expenditure was to be met from the new block grant which was paid on a per capita basis. The amount allocated to tackling the disease in Glasgow is not recorded, but there is no reason to suppose it declined. The average cost of treating a case of respiratory tuberculosis rose from £41 to £63 between 1926 and 1936, while the average cost of treating non-respiratory disease increased from £121 1/7d to £141.¹⁵⁰ Moreover, the opening of Mearns Kirk meant the Corporation maintaining a further 464 beds. Over the country as a whole the cost of treating tuberculosis increased in the 1930's as operating theatres and expensive x-ray facilities became 'essential' weapons in the anti-tuberculosis arsenal.¹⁵¹

149 GCHC Minutes Feb 1927. SRA C1/3/76.

150 M.O.H. Reports Glasgow 1926 and 1936. p296 p. 302.

151 F.B. Smith, Retreat op.cit. p.145.

Accurate figures on capital costs are also unavailable, but if one takes the proportions paid by central and local government for Mearnskirck as the norm, then a rough estimate can be made. The hospital cost £461,027 to build. The Corporation received £83,520 as grant-in-aid from the Board of Health.¹⁵² Thus the Exchequer met 18 per cent of capital costs, leaving the ratepayer accountable for the remainder. Between 1919 and 1929, the Town Clerk reported that he had received £120,488 as grant-in-aid for capital expenditure on tuberculosis hospitals. In proportion to the cost of erecting Mearnskirck, the Corporation must have spent approximately £670,000 in capital costs in the 1920's. This adds, on average, a further £67,000 to the city's annual tuberculosis expenditure.

Adding capital to maintenance costs, the administrative control of tuberculosis in Glasgow was running at about £265,000 per annum in the 1920's. By far the largest part of this sum - £232,000 - was swallowed up by institutional treatment. The sum allocated to treating the different forms of the disease can be ascertained from figures giving the average cost of treatment. In 1926 there were approximately 700 beds reserved for the treatment of respiratory tuberculosis and 450 for non-respiratory. The average cost per bed of treating the latter was £121 1/7d, giving a total yearly maintenance cost of £54,510. Capital costs, apportioned at the ratio of 1150/450 must have been approximately

¹⁵² GCHC Minutes May 1930. SRA C1/3/83.

£26,000. Thus the cost of treating non-respiratory tuberculosis in Glasgow in 1926 would have been about £80,500, while the cost of treating respiratory tuberculosis was about £151,500. While some justification might be made for expenditure on the former, the large sums of money expended on the treatment of respiratory tuberculosis were wasted, not only in terms of cure, but also in terms of prevention and education.

Why, then, did the institutional treatment of tuberculosis receive so much attention and resources when the returns were so poor? Part of the problem lay with the propaganda disseminated by the Ministry of Health and the N.A.P.T. to the effect that sanatoria could cure. Having invested so much faith and resources in institutional treatment, the state itself could not afford to question its value. Although the N.A.P.T. believed that,

the public we have to deal with has the psychology of a child and must therefore be taught and educated as a child,¹⁵³

few would have concurred with the abolition of sanatoria after all the publicity they had been accorded. Indeed, the call was generally for the building of more sanatoria.¹⁵⁴ As late as 1955, the decision to cease sending Scottish respiratory patients to sanatoria in Switzerland was made an election issue at Greenock, where

153 F.R.G. Heaf, 'Anti-tuberculosis propaganda.' Tubercle 1929. p.553.

154 Bryder, Mountain op cit p. 96.

tuberculosis incidences were particularly high.¹⁵⁵ The Board and Ministry of Health could also point to the continuing mortality decline as evidence that institutional treatment was worthwhile. The onus, they argued, was on the detractors to prove that institutions had played no part in the decline.¹⁵⁶ Criticism of their curative powers was answered, as it had been before 1911, by claims that institutions played an important role in prevention and education.

The one powerful group which might have mobilised criticism of the stress on curative as against preventive measures, Medical Officers of Health, were effectively silenced because they, themselves, were made responsible for administering the institutions. As has been noted, in the early 1920's Chalmers in Glasgow and Williamson and Guy in Edinburgh were critical of the view that institutional treatment was the answer to the problem of tuberculosis, advocating instead a public health campaign directed at eradicating small, insanitary houses. In the course of the interwar years, however, such criticism became muted. Whereas in the early 1920's the Reports of the Glasgow M.O.H. on tuberculosis were primarily concerned with recording the living conditions of registered patients, by the 1930's they had become mere statistical summaries of dispensary, sanatorium and hospital reports. What Webster has described as the

155 D. Hamilton, The Healers - A History of Medicine in Scotland (Edinburgh 1981) p.269. See also Ch.5 below 'The National Health Service'.

156 10th Annual Report Scottish Board of Health 1929. [Cmd 3304] 1930. p.200.

'administrative sclerotisation of the public health sector' has also been noted by Lewis.¹⁵⁷ She has convincingly argued that there was a decided reorientation in public health thinking during its 'golden-age' in the interwar years. There was a marked shift in concern away from the environment towards the provision of personal health services, particularly after the passing of the 1929 Local Government Act;

preoccupation with the delivery of health care services via clinics and hospitals resulted in the relative neglect of the M.O.H.'s traditional task of 'community watchdog' in respect to sources of danger to the people's health.¹⁵⁸

Given the importance of tuberculosis in the public health budget, the increasing concern of Medical Officers with institutional treatment provides a powerful example of this tendency, even before 1929. Medical Officers of Health and Tuberculosis Officers were quick to turn to clinical medicine because they were trying to establish and enhance their professional standing. Others believed, along with the Webbs, that universal medical provision would eventually be delivered at the municipal level and were thus keen to expand their administrative empires.

It was also argued that the clinical treatment of tuberculosis, by rendering cases sputum-negative, was indeed preventive medicine. However, only a small minority of cases were successfully treated, while the majority of infectious cases were still at large in the

¹⁵⁷ C. Webster, 'Origins of social medicine in Britain.' S.S. H.M. Bulletin June 1986. op cit p.53. Lewis, What Price Community Medicine? op cit pp.18-35.

¹⁵⁸ ibid. p.17.

community receiving 'treatment' in houses which according to the Board of Health itself, 'were no place for the open or infectious case'. It will be argued in the next chapter, that such houses were also a significant causal factor in accounting for high incidences of tuberculosis.

(6). SUMMARY

After allowing for the indirect effects of improved housing, food and environmental conditions generally, (the tuberculosis service), has very tangible results to its credit over the last twenty years, reflected in the improvements in the rate of mortality from the disease.¹⁵⁹

Thus ran the official verdict on the operation of the anti-tuberculosis schemes in the interwar years. It has been argued here that the schemes could not have contributed to any significant extent to the continuing downward trend of tuberculosis mortality. The schemes failed because national health insurance could not satisfy the three criteria identified by Bulstrode as essential to their success; early diagnosis, adequate periods of treatment and the provision of after-care. The schemes, relying as they did on the provision of institutional treatment, encountered all the problems experienced at Bridge of Weir prior to 1911.

Given the treatment available, it is unlikely that the schemes would have made much impact on mortality trends, even if they could have operated as planned. Areas such as Fife, for example, which had a very badly organised anti-tuberculosis scheme, enjoyed far lower mortality rates than the country as a whole or cities like Glasgow where millions of pounds were spent on combat the problem.

The availability of government grants orientated the tuberculosis service towards an almost total dependency

¹⁵⁹ Department of Health for Scotland - A National Health Service. [Cmd 6502] 1944. p.60.

on institutional treatment. This dependency was fostered at the expense of adequate preventive measures. M.O.H.s, the former champions of preventive medicine, were now more concerned with the provision of personal health services. So long as mortality continued to decline, the defenders of the system could argue that it was effective. When mortality began to increase following the outbreak of war in 1939, the schemes were revealed as being totally inadequate for dealing with the problem of tuberculosis.

In the absence of an effective cure, resources should have been concentrated on prevention. This, however, would have impinged heavily upon politically sensitive areas such as housing and a minimum wage. The medical profession, in general, were not prepared to tackle such issues. Instead, the call was for more sanatoria. Thus, institutional treatment was not only expensive and wholly ineffective, it also served to distract attention away from the more radical solutions which were being proposed to protect the public from the disease.

CHAPTER FOUR

EPIDEMIOLOGY AND CAUSAL FACTORS

(1) INTRODUCTION

Having demonstrated that the institution-dominated anti-tuberculosis schemes were, at best, marginal in accounting for the demise of tuberculosis, it is now time to examine the factors which may have proved decisive. This chapter will first of all describe the epidemiological pattern of tuberculosis mortality in Scotland between 1870 and 1960 and then, by examining each of the causal factors identified as predisposing persons to contract the disease, try to identify the forces which compelled the retreat.¹ These factors may have had varying influences according to time and place. It is, therefore, necessary to examine each in turn, both to determine their validity as causal agents and, by reference to the Scottish mortality experience, to ascertain whether or not they adequately describe the epidemiological pattern.

¹ Mortality statistics are generally held to be more reliable than morbidity statistics which, as well as being only available from 1911, were also notoriously inconsistent between areas as was pointed out in Chapter Three. Mortality statistics are not, however, problem free. But, as Hall points out, the constant trends in mortality statistics do make sense in the light of our limited knowledge of the disease's aetiology, suggesting that diagnostic and certification errors may have cancelled each other out. Nevertheless it is worth bearing in mind that mortality statistics may not reflect the true picture of tuberculosis incidence, particularly in the nineteenth century. S.Hall, 'The prevalence of tuberculosis.' in Heaf (ed), Symposium. op cit. pp.66-69.

Before examining the factors which may have influenced the Scottish pattern of tuberculosis mortality it is salutary to bear in mind that the disease was on the wane in not only the major centres of British and European population, but also throughout the industrialising world. Fig. 4.(i) shows the mortality decline from respiratory tuberculosis in some of the major cities in the world between 1881 and 1912.

Fig.4.(i). Mortality Decline Respiratory Tuberculosis in Various World Cities 1881-1912. Deaths per 1,000 living.²

	<u>1881</u>	<u>1912</u>	<u>DECLINE</u>
Edinburgh	2.12	1.08	49%
Glasgow	3.11	1.31	58%
London	2.22	1.35	39%
Dublin	3.46	2.45	29%
Belfast	3.82	2.05	46%
Paris	4.41	3.32	25%
Copenhagen	2.73	1.37	50%
St Petersburg	5.49	2.87	48%
Moscow	4.11	2.44	41%
Berlin	3.39	1.68	50%
Vienna	6.85	2.37	65%
New York	3.98	1.70	57%
Chicago	1.80	1.44	20%
Buenos Aires	2.70	1.66	39%

Given that there was no advance in therapeutics, that preventive measures were inadequate and that there was no evidence that the bacillus was declining in virulence, mortality must have been decreasing because the host was becoming more resistant. The fact that the disease was retreating on such a broad front suggests that a common factor must have been operating. It will be argued, with particular reference to the mortality experience of the Island of Lewis, that a population's level of natural resistance is an important determinant

² B.J.T.B. July 1915. p.118.

of mortality levels. In the absence of any radical changes in the environment, it has been argued that mortality decline on Lewis was spontaneous and, therefore, that tuberculosis is a self-limiting disease.³ The universality of the retreat in the late nineteenth century would also seem to bear this argument out.

Increased natural resistance, however, does not tell the whole story. Such an explanation cannot account for the wide differences in mortality levels between social classes. Like infant mortality, tuberculosis mortality rates provided a sensitive instrument for measuring the socio-economic standing of any given community. Although the disease was not confined to the poor, it was almost a universal axiom that tuberculosis mortality levels were highest among the most economically disadvantaged members of the community. Hersch's work on statistics from Paris, for example, demonstrated that if one knew what ratio the poverty index of a district bore in relation to the city mean, then one could also tell what proportion its rate of tuberculosis mortality would be.⁴ This social gradient of tuberculosis mortality was common to all major cities. Thus in Glasgow in 1911 death-rates in Calton were six

³ R.S. Doig, A Century of Tuberculosis in the Isle of Lewis in the Western Isles. Unpublished M.D. Thesis. Glasgow University. 1965. As a disease of great antiquity it might be thought that man would long ago have developed a resistance to tuberculosis. Like other infectious diseases, however, there is evidence that tuberculosis 'epidemics' have waxed and waned through the centuries. Industrialisation and concomitant urbanisation undoubtedly caused the onset of the nineteenth century 'epidemic'.

⁴ Quoted by Greenwood, Public Health. Aug. 1928. p.355.

times higher than those in Kelvinside.⁵ Researchers investigating this strong association between poverty and tuberculosis generally found it impossible to separate the influence of individual factors from the poverty complex. As respiratory tuberculosis was both an infectious and a deficiency disease, attention tended to be focussed on overcrowding and malnutrition as the most likely causal agents, but as these two social evils invariably existed together it was difficult to attribute any causal 'weight' to either factor. In addition, several other factors have come under scrutiny; notably migration, heredity, racial susceptibility, occupation, stress, social habits and levels of milk tuberculisation.⁶

McKeown has estimated that the decline of tuberculosis was responsible for about forty-seven per cent of total mortality decline in England and Wales in the nineteenth century. In Scotland it was responsible for forty-six per cent of the total decline.⁷ Much of the debate surrounding the reasons for nineteenth century mortality decline has concentrated, therefore, on the role played by tuberculosis, particularly as tuberculosis

⁵ M.O.H. Report Glasgow 1911. Appendix XX1.

⁶ The difficulty of isolating factors such as diet, overcrowding and heredity is compounded by the fact that they acted synergistically when creating mortality patterns. For a good discussion of the problems involved in unravelling such relationships, see J. Walter and R. Schofield, Famine, Disease and the Social Order in Early Modern Society. (Cambridge 1989). pp.17-37.

⁷ T. McKeown and R.G. Record, 'Reasons for the decline of mortality.' Population Studies (16) 1962. op cit. p.100. M. Flinn, Scottish Population History. (Cambridge 1977). p.406.

mortality decline far outstripped general mortality decline.⁸ In his seminal studies, McKeown concluded, through his now much criticised technique of deduction by elimination, that tuberculosis was driven into retreat by a general increase in dietary intake occasioned by increases in real wages. He further maintained that the same interpretation applied to tuberculosis mortality decline during the present century prior to the introduction of effective chemotherapy, although he allowed that by then 'improvements in housing were also important.'⁹ McKeown's thesis has been criticised both for the methodology he employed and for his assumption that rising real wages necessarily lead to rising nutritional standards, but the view that improved diet was the principal force behind nineteenth century mortality decline has remained unchallenged until comparatively recently.¹⁰ Szreter, however, has since

8 Between 1871 and 1930 tuberculosis mortality dropped by seventy-four per cent in Scotland while the decrease in other causes of death was only thirty-three per cent.

9 McKeown et al, 'An interpretation of the decline in mortality in England and Wales during the present century.' Population Studies. (19) 1975. p.422.

10 McKeown's methodology involved a detailed exposition of all the factors which could not have led to the mortality decline, leaving rising living standards as the only contender. There was no detailed explanation as to why rising living standards should have been the critical factor, only that the others could not have been. Diet, therefore, won by default. The assumption that rising real wages led to rising levels of food intake and so to better health can be challenged. Much would obviously depend on the kind of food being bought. Moreover, had the extra money gone to the publican or the tobacconist, then rising real wages would have been detrimental to health. It could also be argued that if some of the increase in wages was spent on better clothing and footwear, then health may also have improved, although not through improved nutrition. For a good summary of McKeown's present ideas, see T.McKeown, 'Food, infection

argued that, through his efforts to deflate the pretensions of 'scientific medicine' as a major contributor to mortality decline, the public health movement has become 'the innocent passenger-seat victim of McKeown's reckless driving.'¹¹ Szreter maintains that the public health movement, particularly at the local level, was, in fact, the principal force behind the retreat of mortality through the provision of improved water supplies and better sanitary conditions while at the same time reducing overcrowding. He further argues that respiratory tuberculosis mortality would have been influenced by such improvements because its incidence was,

a dependent function of the general infectivity and frequency of other debilitating diseases.

That is, other illnesses can lower an individual's resistance to tuberculosis and cause the onset of clinical disease.¹² In stressing the role of public

and population.' in Rotberg and Rabb (eds), Hunger and History. (Cambridge 1983).

11 S. Szreter, 'The importance of social intervention.' Journal of the S.S.H.M. op cit. For further criticism of McKeown's neglect of the role public health see R.Woods and P.Hinde, 'Mortality in Victorian England: models and patterns.' Journal of Interdisciplinary History 1987.

Vol. XV111. pp. 27-54.

12 Although plausible, such an explanation is impossible to verify. Given that resistance is extremely important in determining tuberculosis morbidity and that cross-infection is likely to lessen such resistance, levels of general illness are bound to influence tuberculosis incidence. However, although such conditions as diabetes, bronchitis, pleurisy and pneumonia often preceded the onset of tuberculosis, it could also be argued that those who succumbed to such diseases actually lessened tuberculosis mortality. That is, they did not live long enough to die from respiratory tuberculosis. One piece of twentieth century evidence would seem to refute Szreter's cross-infection argument. During and after the 1919 influenza epidemic, tuberculosis mortality fell

health, Szreter maintains that direct, human agency played a greater part in reducing mortality than did the 'hidden hand' of rising real wages. This chapter will examine the merits of these contending theses in the light of the Scottish experience of tuberculosis epidemiology.

(2) EPIDEMIOLOGY

Prior to 1870 mortality from respiratory tuberculosis was increasing in Scotland. Mortality rates were much greater in Scotland than in England where mortality decline had commenced from the 1850's. This is, perhaps, surprising as respiratory tuberculosis mortality rates were generally much higher in urban than in rural areas and England was more urbanised at this time.¹³ During the last three decades of the nineteenth century, however, the death-rate in Scotland declined from an average of 2,250 deaths per million of population to 1,530; a reduction of forty per cent. Although from a much higher rate, mortality in Glasgow fell by fifty-five per cent over the same period. Edinburgh and Dundee enjoyed a reduction of twenty-nine and thirty-six per cent respectively. Perhaps an even more remarkable

dramatically in Great Britain. This might indicate that some potential tuberculosis victims died of influenza, although, again, it is impossible to prove one way or the other.

¹³ By 1910 over sixty per cent of the population of England and Wales were living in towns and cities of more than 20,000 people. In Scotland the proportion was just under fifty per cent. R.J. Morris, 'Urbanisation of Scotland.' in Fraser and Morris (eds), People and Society op cit. p.74.

statistic is the fact that fifty-three per cent of the total decline in respiratory tuberculosis mortality in Scotland between 1870 and the introduction of effective chemotherapy in 1950 occurred before 1900. In Glasgow fully seventy-eight per cent of the decline occurred over the same period. (see fig. 4.(ii).). Nationally, mortality from non-respiratory tuberculosis also fell by forty per cent, almost entirely over the period 1870-90.

This dramatic decline in respiratory mortality between 1870 and 1900 was not uniform throughout the country. For the large towns as a whole, mortality declined by forty-seven per cent, while in rural areas the decline was only seventeen per cent. On the Scottish islands mortality fell by a mere nine per cent. Mortality also fell faster among females than males. For Scotland as a whole, in 1870, female mortality was higher than male mortality, but by 1900 it was lower. Most of the female improvement was accounted for by the large towns, where female mortality declined by forty-nine per cent over the period as opposed to only twenty per cent in rural areas. The rapid rate of mortality decline was thus principally confined to the large towns, where death-rates had been sixty-two per cent higher than in rural areas in 1870. This was not the case in England and Wales where the decline in rural areas between 1870-80 and 1900-10 was equal to urban decline. Female mortality also fell faster in rural England than in rural Scotland.¹⁴

¹⁴ G. Cronje, 'Tuberculosis and mortality decline' in Woods and Woodward (eds), Urban Disease and Mortality Decline op cit. p.94.

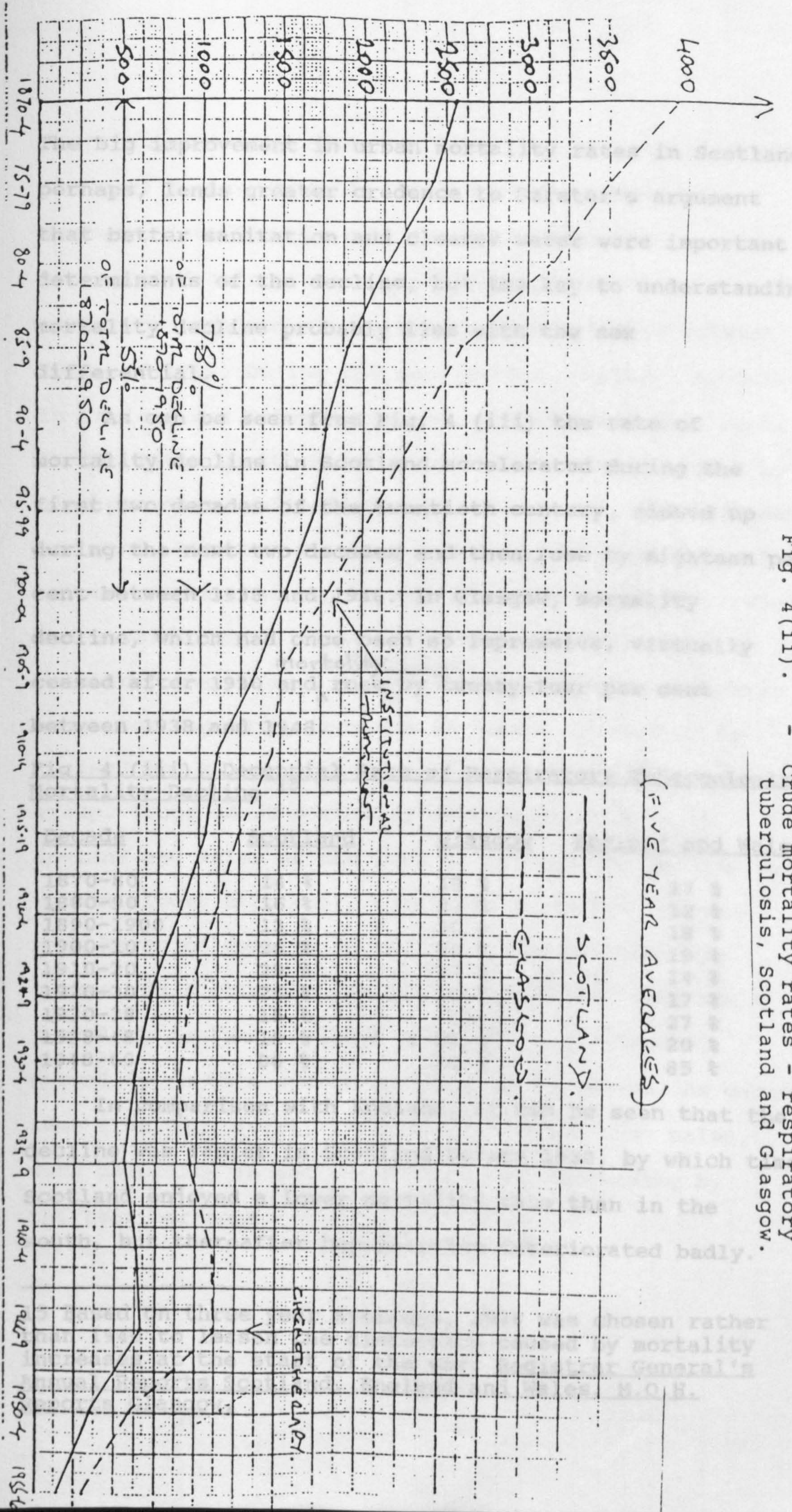


Fig. 4(ii). - Crude mortality rates - respiratory tuberculosis, Scotland and Glasgow.

The big improvement in urban mortality rates in Scotland, perhaps, lends greater credence to Szreter's argument that better sanitation and cleaner water were important determinants of the decline, but the key to understanding mortality decline probably lies with the sex differential.

As can be seen from Fig. 4 (iii) the rate of mortality decline in Scotland accelerated during the first two decades of the twentieth century, slowed up during the next two decades and then rose by eighteen per cent between 1938 and 1948. In Glasgow, mortality decline, which had once been so impressive, virtually ceased after 1930 and ^{mortality} rose by twenty-four per cent between 1938 and 1948.

Fig. 4.(iii). Decennial Rate of Respiratory Tuberculosis Mortality Decline ¹⁵

<u>Decade</u>	<u>Scotland</u>	<u>Glasgow</u>	<u>England and Wales</u>
1870-80	14 %	19 %	17 %
1880-90	16 %	23 %	12 %
1890-1900	13 %	20 %	18 %
1900-10	26 %	25 %	19 %
1910-20	29 %	27 %	14 %
1920-30	25 %	19 %	17 %
1930-38	15 %	2 %	27 %
1938-48	+ 18 %	+ 24 %	20 %
1948-60	86 %	82 %	85 %

In comparison with England, it can be seen that the decline was faster in Scotland before 1930, by which time Scotland enjoyed a lower mortality rate than in the south, but thereafter her position deteriorated badly.

¹⁵ Based on three year averages. 1938 was chosen rather than 1940 to lessen the distortion caused by mortality increases at the start of the war. Registrar General's Annual Reports Scotland, England and Wales. M.O.H. Reports Glasgow.

Scottish mortality rates had been falling into line with those of England towards the end of the nineteenth century. (see Fig. 1. p.1) The First World War accelerated this process. Respiratory tuberculosis mortality remained almost constant in Scotland between 1913 and 1918. During the same period, however, mortality in England and Wales increased by twenty-five per cent. In the large Scottish burghs mortality actually fell by nine per cent, while in Glasgow the decline was thirteen per cent. Although Scotland had a higher mortality rate before the war, as can be seen, southern mortality rates increased to match those of Scotland. Overall in Scotland, there was a slight decrease in male mortality and a corresponding increase in female mortality. In England and Wales, young women were the worst affected group. Young adult mortality decline had ceased in England and Wales at the turn of the century and was to remain almost stationary until the 1930s when it once more began to decline at the same rate as other age groups. In Scotland a similar cessation of young adult mortality decline occurred after 1920. In Glasgow, mortality in this age group actually increased. As can be seen from Fig. 4.(v), females fared worse than males, with morbidity in the 15-25 age group increasing by thirteen per cent.

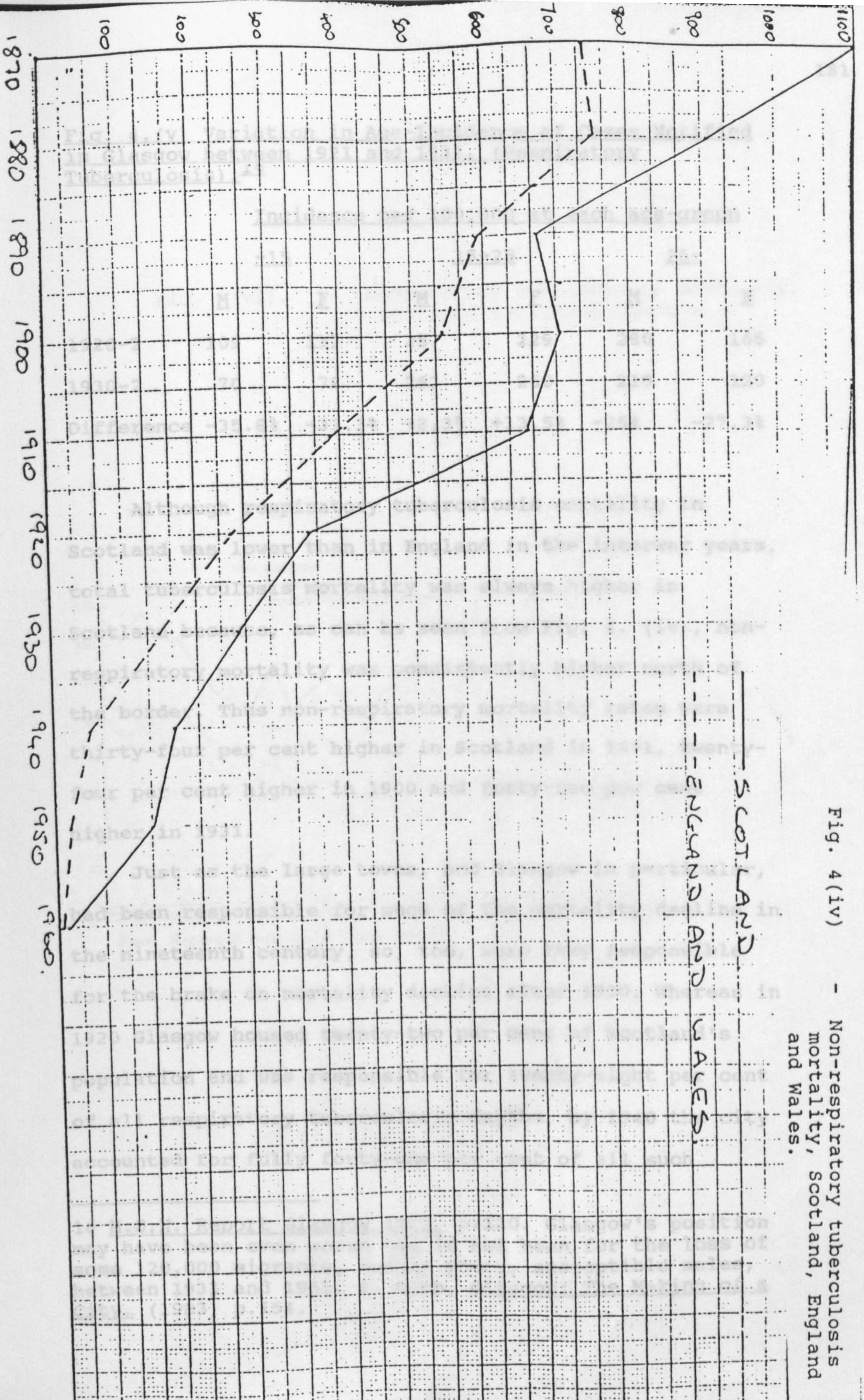


Fig. 4(iv) - Non-respiratory tuberculosis mortality, Scotland, England and Wales.

Fig. 4.(v) Variation in Age-Incidence of Cases Notified in Glasgow between 1921 and 1931. (Respiratory Tuberculosis).¹⁶

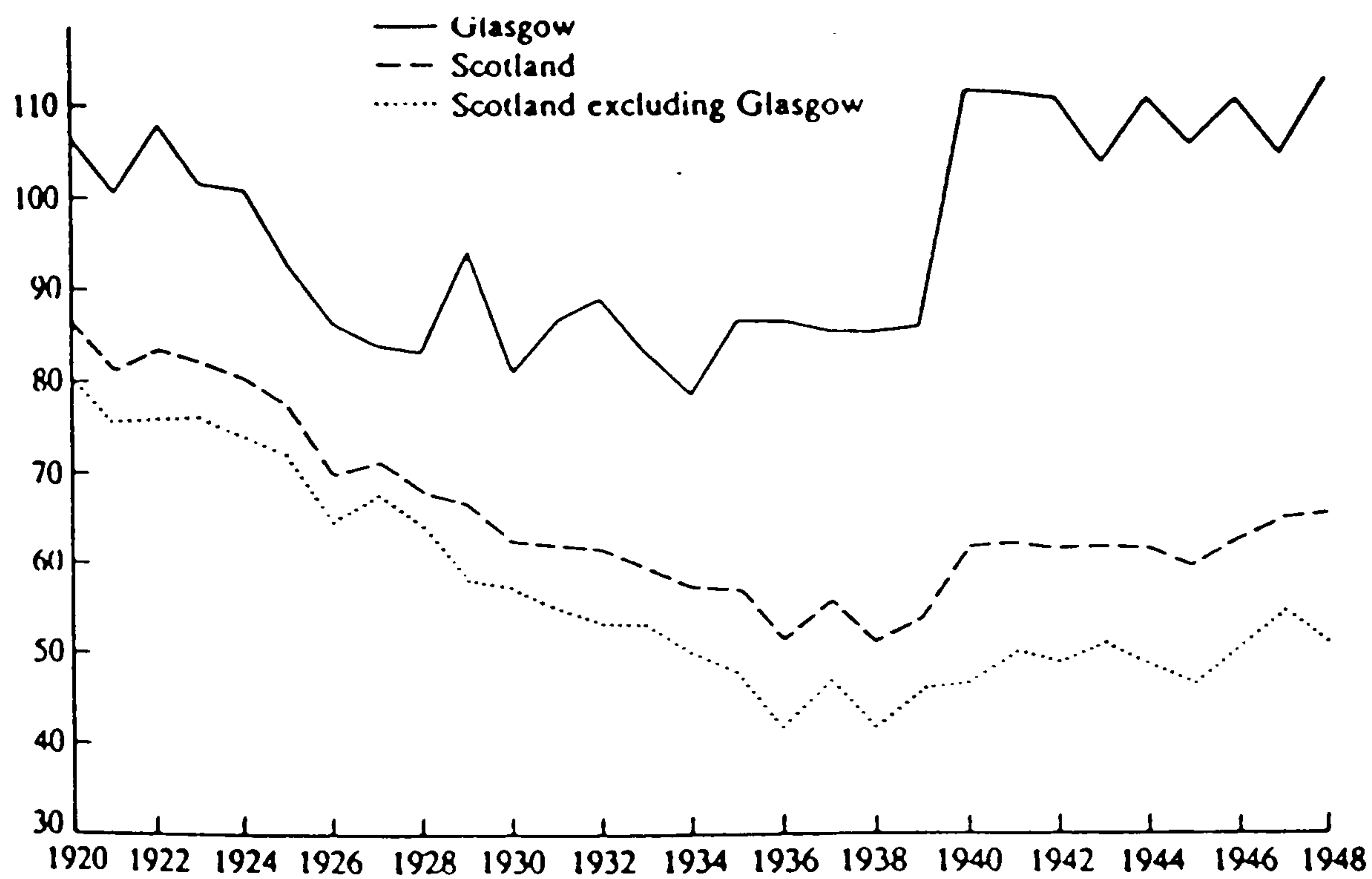
	<u>Incidence per 100,000 at each age-group</u>					
	<u>-15</u>		<u>15-25</u>		<u>25-</u>	
	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>
1920-2	109	117	257	229	280	165
1930-2	70	78	263	260	210	120
Difference	-35.8%	-33.3%	+2.3%	+13.5%	-25%	-27.3%

Although respiratory tuberculosis mortality in Scotland was lower than in England in the interwar years, total tuberculosis mortality was always higher in Scotland because, as can be seen from Fig. 4. (iv), non-respiratory mortality was consistently higher north of the border. Thus non-respiratory mortality rates were thirty-four per cent higher in Scotland in 1871, twenty-four per cent higher in 1900 and forty-two per cent higher in 1931.

Just as the large towns, and Glasgow in particular, had been responsible for much of the mortality decline in the nineteenth century, so, too, were they responsible for the brake on mortality decline after 1930. Whereas in 1920 Glasgow housed twenty-two per cent of Scotland's population and was responsible for twenty-eight per cent of all respiratory tuberculosis deaths, by 1940 the city accounted for fully forty-one per cent of all such

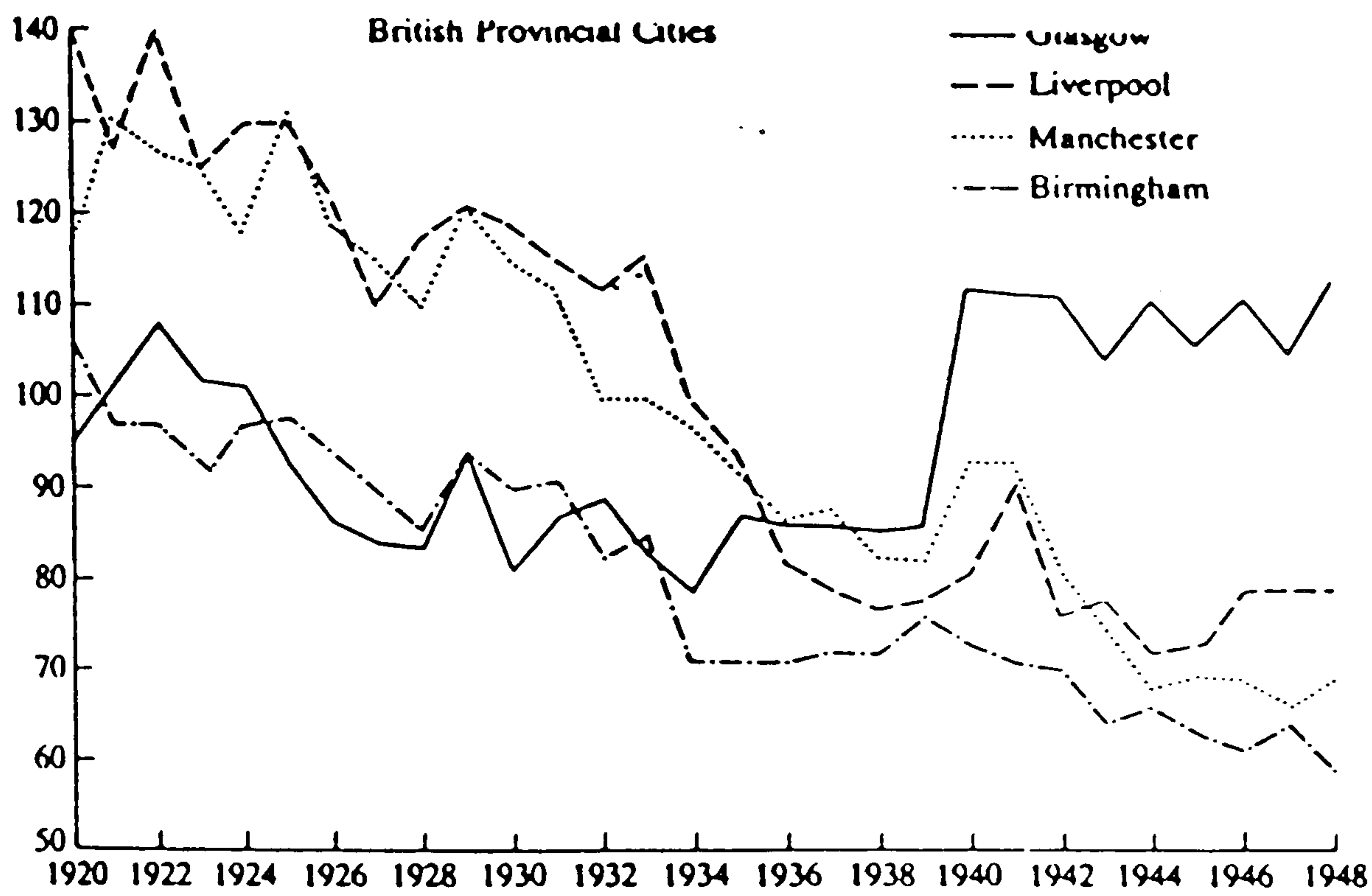
¹⁶ M.O.H. Report Glasgow 1932. p.120. Glasgow's position may have been even worse had it not been for the loss of some 120,000 migrants, mostly young, susceptible males, between 1931 and 1951. A. Gibb, Glasgow: The Making of a City. (1983) p.154.

Fig. 4(vi). - Respiratory tuberculosis mortality,
Scotland excluding Glasgow.



Source: Registrar General Annual Reports, Scotland

Fig. 4(vii). - Respiratory tuberculosis mortality - major British provincial cities.



Source: Registrar General Annual Reports England, Wales and Scotland

deaths. This retardation of mortality decline in Glasgow and West Central Scotland served to slow the Scottish decline. As can be seen from Fig. 4(vi), Glasgow acted as a drag on the Scottish statistics. Glasgow's deteriorating position can be readily appreciated from Fig. 4.(vii) which compares mortality decline in Britain's major provincial cities. In 1920 Glasgow was experiencing a lower rate of mortality than the English cities but thereafter her relative position declined markedly until by 1938 the city had the worst record of the four.¹⁷ The war years were to see this gap grow alarmingly. Although initially mortality increased in all the cities, the English cities renewed their decline after 1941. This 'triumph of preventive medicine' did not extend north of the border.¹⁸ In Glasgow mortality rates remained stubbornly high until 1948, by which time almost one out of every ten deaths could be attributed to the disease.¹⁹ The following year it was reported that tuberculosis mortality was 'not only much higher than

17 Glasgow's deteriorating position with respect to respiratory tuberculosis was mirrored by its experience with infant mortality. Thus in 1911 the city had a lower infant mortality rate than Manchester, Liverpool and Birmingham, but by 1938 its record was the worst of the four cities. In 1911 mortality rates per 1,000 live births were 139, 154, 154 and 164 respectively. By 1938 the corresponding figures were 87, 69, 73 and 61. M.O.H. Reports Glasgow It would, therefore, seem likely that the factors influencing both sets of statistics were the same.

18 Smith, Retreat op cit. p.223. Smith's own statistics show that respiratory tuberculosis mortality was much lower in Scotland than in England and Wales in both 1941 and 1951. An accompanying graph does, however, show far higher rates in Scotland at this time suggesting, perhaps, a series of misprints. ibid p.7.

19 Public Health Sept. 1948. p.224

that of any city in England but also exceeds that of any city in the Western zones of Germany.²⁰ By then respiratory tuberculosis mortality levels were fifty per cent higher than those prevailing in England and Wales. Morbidity rates were even worse. In 1951 notifications of young women were ninety-five per cent higher than in England and Wales, while those for young men were fifty-five per cent above the southern mean.²¹ Thus during and after the Second World War the relative position of Scotland and England was reversed. Whereas Scotland had fared relatively well during the first conflict, she suffered much harder during the second. Young females were the worst affected group of the population with respect to tuberculosis in Scotland during the Second War, just as they had been in England and Wales during the First. Glasgow's poor performance was primarily responsible for this deterioration in Scotland's overall record with respect to England and Wales.

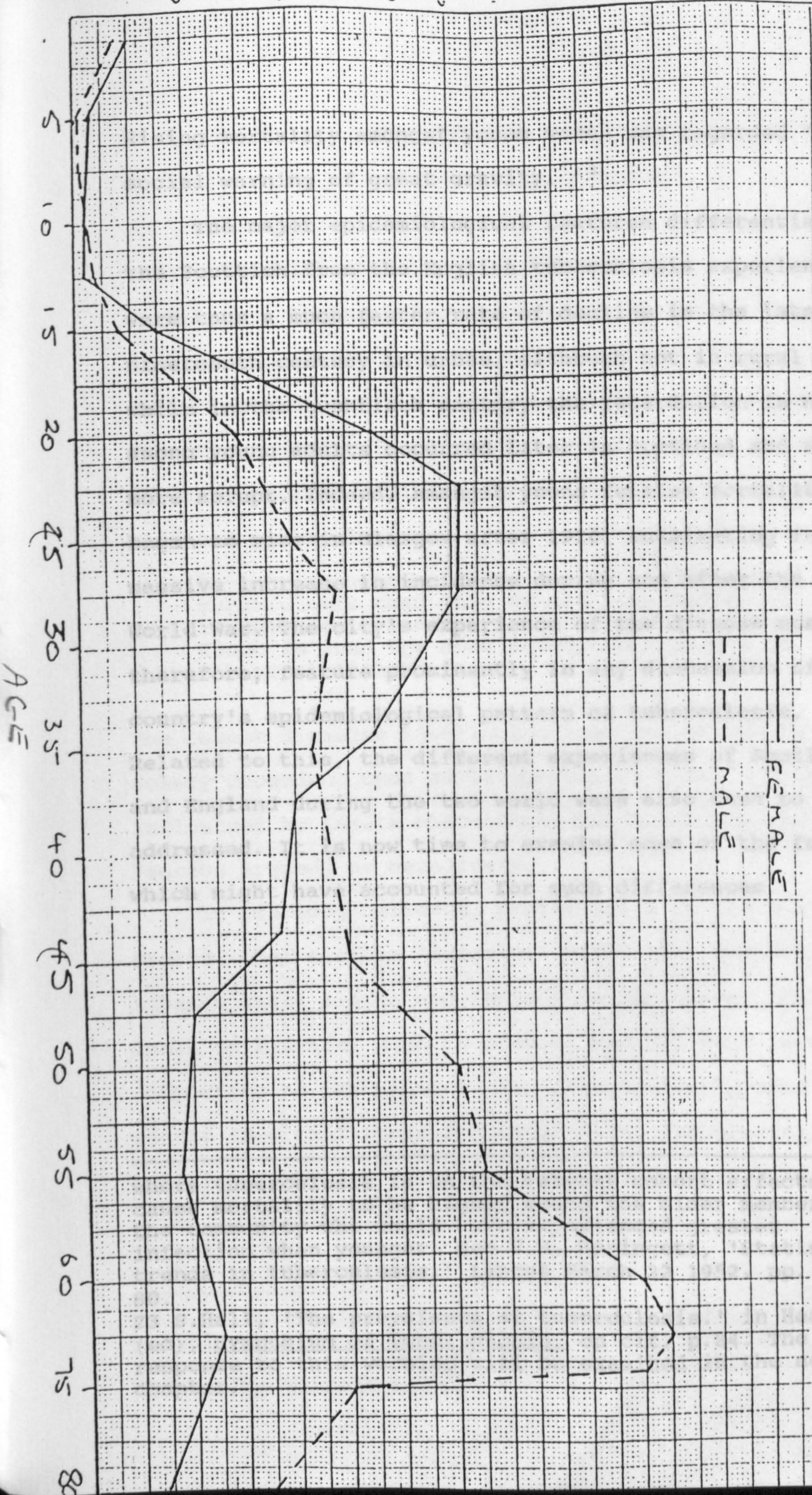
Because incidence and mortality rates among young females remained high until the 1950s, Scotland continued to exhibit a 'primitive' female tuberculosis mortality curve for years after other industrialised countries had progressed to a more 'mature' curve. (see fig. 4.(viii))²²

²⁰ Tubercle August 1949. p.193. For a description of the health and nutritional condition of the post-war, urban population of Western Germany, see Lancet 6th July 1948. p.22.

²¹ Association of Scientific Workers Memorandum on Scottish Affairs No.3. Respiratory Tuberculosis in Scotland : Present Position and Prospects. (Glasgow 1953) p.4.

²² ibid. p. 3. The 'primitive; mortality curve is where mortality continues to peak at younger age groups. The mature curve peaks at older age groups. In a community

Fig. 4(viii). - Age distribution of respiratory tuberculosis mortality in Scotland by sex.



Rising mortality amongst young women was regarded 'as a social warning of great gravity.'²³

The major epidemiological features differentiating the Scottish from the English tuberculosis experience were thus a much faster rate of decline in the late nineteenth century in urban, although not in rural areas, while in the twentieth century the retardation in decline among young adults occurred later in Scotland and was far more abrupt. Indeed, amongst young females mortality began to rise in Glasgow after 1920, culminating in a massive increase in incidence during and after the Second World War. The city's experience of the disease must, therefore, feature prominently in any discussion of the country's epidemiological pattern of tuberculosis. Related to this, the different experiences of Scotland and England during the two world wars also need to be addressed. It is now time to examine some of the factors which might have accounted for such differences.

where tuberculosis is on the retreat cohort effects would cause mortality to be higher among the older members of the community who would have experienced greater infection when younger. See V.H. Springett, 'Statistical trends in tuberculosis.' Lancet March 22 1952. pp. 577-80.

²³ S.Hall, 'The prevalence of tuberculosis.' in Heaf (ed), Symposium of Tuberculosis. op cit. p.84. The response to this warning will be examined in the next chapter.

3. RACE AND RESISTANCE

a) General Discussion

In early 1930, 249 new-born babies were orally vaccinated with what was thought to be B.C.G. at Lubeck in Germany. It was later established that they were, in fact, given virulent tubercle bacilli. Tragically, seventy-six of the babies died, but the rest survived despite receiving identical treatment. Twelve years later none of the 173 survivors exhibited any symptoms of clinical tuberculosis.

No better example exists in the literature of tuberculosis than this of the high degree of resistance to massive infection which is to be found in even the most susceptible groups of the population.²⁴

The Lubeck disaster highlighted that resistance is not solely dependent upon environmental factors, but is also influenced by innate characteristics which may, as Pearson argued, be hereditary.

It was long believed, particularly in the United States, that certain 'inferior' races were susceptible to tuberculosis; blacks and Indians in the States, Celts and Gaels in Britain. High incidences amongst such races in comparison to the majority population clearly owed much to the fact that their economic status was generally inferior, but they can also be partly explained in terms of their possessing lower natural immunity to the

²⁴ J.B. McDougall, Tuberculosis, A Global Study in Social Pathology. (Edinburgh 1949). p.210. Smith, Retreat. op cit pp.197-9. R.Gordon, Great Medical Disasters. (1983). Dubos, The White Plague op cit. p. 123.

disease.²⁵ Populations which have had a long experience of exposure to the tubercle bacillus, usually urban populations, have a greater natural immunity to infection. Such immunity can, of course, be broken down by the ill-effects of poverty, as is evinced by the marked disparities in incidence between social groups. Nevertheless, given a similar environment, the city dweller has an advantage over his neighbour who has recently migrated from an area where there has been limited exposure to tuberculosis. This disadvantage suffered by virgin populations is compounded by the fact that, like other diseases, primary infection by tuberculosis also confers a degree of subsequent immunity.

Contemporaries believed, with some justification, that tuberculosis mortality was not declining as fast in rural as in urban Scotland because migrants who often contracted the disease in urban areas often returned home to die. Such behaviour would not only serve to export tuberculosis mortality from town to country, but it would also place the migrant's susceptible family at risk.

²⁵ This was graphically illustrated by the introduction of the disease by sailors to the South Seas Islands, '...shipwrecked sailors in the early nineteenth century who were used as rations by the cannibals of the South Seas achieved a posthumous revenge by infecting their consumers with tubercle bacillus and producing a devastating epidemic of the disease.' Crofton and Douglas, Respiratory Diseases. op cit. p.233.

Once phthisis attacks any member of any family in rural Lewis, one can prognose with almost absolute certainty that every other member of such a family will fall a victim to that disease sooner or later.²⁶

Although McKeown dismisses the effects of the break up of isolated populations in accounting for English mortality experience in the nineteenth century, exposure of 'virgin' populations may have played a more influential role in Scotland.²⁷ In Scotland the 'isolates' had been more isolated, particularly in the Highlands and Islands.

In the first half of the nineteenth century there was 'practically no tuberculosis on Lewis.'²⁸ By 1924 it was reported that respiratory tuberculosis had reached epidemic proportions on the island; 1,000 out of a total population of 28,000 having contracted the disease.²⁹

Fig. 4 (ix) illustrates the pattern of the epidemic.

26 Dr D. J. MacDonald, M.O.H. Stornoway, Report on the Poor-Laws 1909 - Appendix op cit. [Cd 4978]. p.302. For a vivid account of the common mode of infection within the family of a returning tuberculous migrant, see T. Ferguson, Scottish Social Welfare 1864-1914. op cit. p.247.

27 McKeown and Record, 'Reasons for decline in mortality.' Population Studies. 1962. op cit. p.111.

28 Highlands and Islands Medical Services Report - Vol. 2. Minutes of Evidence. [Cd 6920]. 1913. HMSO. p.218. For further evidence that there was relatively little tuberculosis in the Highlands and Islands in the mid nineteenth century see Flinn (ed), Scottish Population History op. cit. p.414.

29 6th Annual Report Scottish Board of Health 1924. [Cmd 2416] 1925. p.58.

Fig. 4 (ix) Mortality Rate Respiratory Tuberculosis on Lewis by Sex. (deaths per 100,000 of population).³⁰

	<u>ALL</u>	<u>MALE</u>	<u>FEMALE</u>
1865-74	117	133	101
1875-84	147	174	120
1885-94	164	193	136
1895-1904	204	265	142
1905-14	198	255	140
1915-24	171	200	142
1925-34	140	158	123
1935-44	93	113	74
1945-54	79	111	47

Doig argued that Lewis provided a unique opportunity to examine the epidemiology of tuberculosis mortality because the social and economic condition of the islanders changed very slowly, the effects of lowland industrialisation being but marginal to the island. The rapid increase in mortality from the 1870s clearly could not have been caused, as in the lowlands earlier, by the crowding of populations into industrial centres. Neither is there evidence to show that the islanders' standard of living was deteriorating at this time. In terms of nutrition, the population of Lewis was relatively well provided for, enjoying a plentiful supply of fish, although fresh vegetables were scarce.³¹ Doig suggests that the principal reason for the rapid spread of the disease throughout the island was that the population was non-tuberculinised and as such had little resistance to the disease once it had arrived from the mainland. The appalling living conditions associated with the infamous

³⁰ R.S. Doig, A Century of Tuberculosis in Lewis. op cit. p.50.

³¹ It has been suggested that a lack of fresh vegetables might encourage the more acute type of tuberculosis common in the Scottish Islands. Heaf, Symposium op cit. p.30.

'black houses', the squat, single-roomed, overcrowded, smoke-filled, sunless, clay-floored dwellings traditional to the islands, facilitated this rapid dissemination.

Doig further argues that the retreat of the disease was not accompanied by any raising of the socio-economic well-being of the population, nor by the application of positive public health measures. Although he concedes that there was some improvement in housing conditions, brought about partly by the islanders' practice of burning houses in which a person had died of tuberculosis, his point that the disease was diminishing because the population was gradually becoming more resistant is a strong one.³² The Lewis case-study provides sound evidence for suggesting that the slower decline of tuberculosis in rural Scotland was caused, in part, by the relatively late introduction of the disease to the more isolated parts of the country. This might partly explain the discrepancy between the slower rate of decline in rural Scotland in comparison to England. Respiratory mortality in rural lowland areas was as low as anywhere else in Britain. Thus in the early 1930s mortality in Ross and Cromarty was almost five times as great as that in Selkirk. Although the population of the Highlands and Islands was decreasing in relative and absolute terms, the area still contained five per cent of

³² Dubos cites evidence suggesting that it takes approximately 100 years 'of tuberculosis epidemic in a fairly closed community to weed out the human strains most susceptible to the disease.' The White Plague. op cit. p.264.

the total and fifteen per cent of the rural population of Scotland in 1930.

More importantly, perhaps, in terms of the numbers involved, the theory of increasing natural resistance also suggests that an indeterminate share of the decline in urban areas may not have been occasioned by improved living standards and conditions alone, but also by an increase in natural resistance among the population.

If people from rural areas with low levels of tuberculosis incidence, such as Ireland and the Highlands and Islands, possessed little or no resistance to the disease, migration patterns must have influenced mortality trends. Upon migrating to urban centres in search of work, such people were particularly susceptible to contracting the disease. Migrants, however, generally moved into the worse districts of town and took the worst jobs, this was particularly so of the Irish. This made it difficult to separate the influence of reduced immunity from the deleterious effects of the environment.

The theory of racial susceptibility led some commentators to believe that the high incidence of the disease in certain localities was caused by the presence of large numbers of susceptible Irish and Highland migrants. As the rapid expansion of cities like Glasgow slowed down, so the percentage of native born inhabitants increased. Thus in 1861, only fifty-one per cent of the city's population were native born, while fifteen per cent were born in Ireland. By 1901, sixty-two per cent had been born in the city and only four per cent in

Ireland.³³ The proportion of susceptible inhabitants was thus decreasing in line with tuberculosis incidence. In a Glasgow survey of 2,477 tuberculosis cases in 1911, it was established that forty per cent of cases were born outwith the city. Only seventeen per cent had been born within the city along with both parents.³⁴

In his well known study of tuberculosis and social conditions on Tyneside, F.C.S. Bradbury attributed the high tuberculosis rates prevailing in Jarrow in the 1930's partly to the fact that there was a high percentage of Irish descendants in the town. He noted that, given similar social conditions, those of Irish descent fared worse than natives.³⁵ The high proportion of people of Irish descent in Glasgow was frequently cited as an explanation for the high incidences in the city in the 1940's.³⁶ In a study of young adult phthisis

33 R.A. Cage (ed), The Working Class in Glasgow 1750-1914. (1987). p.18.

34 M.O.H. Report Glasgow 1911. p.67.

35 F.C.S. Bradbury, Causal Factors in Tuberculosis. (1933) p. 61. The major tuberculosis specialists, including Philip, seized on this as the most telling factor in accounting for the high incidences of the disease in Jarrow, in spite of the fact that Bradbury himself paid far more attention to poverty and to malnourishment and overcrowding in particular.

36 S.Hall, 'The prevalence of tuberculosis.' in F.R.G. Heaf (ed), Symposium of Tuberculosis op cit. p.84. Three former West of Scotland tuberculosis specialists all commented that a different type of tuberculosis was more common in the west than elsewhere in Scotland, even in the 1950's. The disease was more likely to have been 'softer' and more active as opposed to the chronic type. This they attributed to the fact that many people in the west were of Celtic or Gaelic descent. (Interviews with Dr.s Wilson, Hutchieson and Clayson). Active tuberculosis was, however, common among young adults, and it may have been that the different type of tuberculosis observed was a reflection of the high incidence rates prevailing amongst young adults in the West of Scotland at that time.

in the East End of Glasgow, however, Stuart Laidlaw, later to become the city's M.O.H., found that there was no difference in mortality experience between those of Irish and Scots descent living under similar social conditions, although he did note that the Jewish population exhibited remarkable immunity.³⁷ In her detailed study of respiratory tuberculosis and social conditions in Glasgow in the 1930s, Stein also concluded that 'the contribution of predisposition, if there be any, must be exceedingly small.'³⁸

Smith argues that the earlier development of industrial centres of population in England accounts for the fact that respiratory tuberculosis mortality decline began twenty-thirty years earlier than in Scotland.³⁹ Such an explanation, drawing on the theory of increased generational resistance, might account for Scotland's increased mortality in World War Two. That is, in terms of natural immunity, the population of Scotland during the Second War was at the same stage as England's

37 S.A. Laidlaw, The Epidemiology of Young Adult Phthisis op cit. p. 114. It was commonly believed that people of Jewish descent enjoyed low tuberculosis mortality rates because they had a long experience of urban living. This was not, however, the case for the majority of Glasgow's Jewish community who originally migrated from rural Eastern Europe. That high levels of natural resistance can be broken down by adverse environmental conditions is highlighted by the fact that, whereas during World War One the Jewish population of Warsaw had a much lower tuberculosis mortality than that prevailing amongst the Christian community, during the Second War, when the Nazis herded the Jews into ghettos, the Jewish mortality rate rose much higher than the Christian. McDougall, Tuberculosis op cit. p.251.

38 L.Stein, 'Tuberculosis and the 'social complex' in Glasgow.' British Journal of Social Medicine. (6) Jan. 1952. p.29.

39 Smith, Retreat op cit p.242.

population during the First. However, if the northern population was lagging by twenty-thirty years behind the southern in terms of immunity, then one would have expected mortality to have been much higher in Scotland during the First War. Lower natural immunity, moreover, cannot explain why mortality was lower in Scotland in the 1920's.

b) The Scottish Experience

It is impossible to determine how important increased natural resistance was in accounting for the retreat of tuberculosis in the major cities, particularly as such resistance could not be measured and could be readily broken down in the face of adverse social circumstances. It cannot, however, be left out of any equation hoping to account for the reasons for tuberculosis mortality decline, as it has been by both McKeown and Szreter. It would seem likely, however, that its importance declined in the twentieth century as the growth of cities like Glasgow slowed and the population became more stable. Lack of natural resistance could partly explain why mortality rates increased in the more isolated areas of the Highlands and Islands in the twentieth century. As such, it may also partly account for the fact that Scottish rural mortality rates did not fall as fast as they did south of the border.

4. DIET

a) General Discussion

Although a voluminous literature existed on the importance of diet in the treatment of tuberculosis, nutrition had a far more important role to play in explaining why many people developed the disease in the first place. Because contracting clinical disease depends to a large extent upon levels of resistance, it is generally accepted that malnutrition, by both lowering natural or acquired resistance and by leaving the host exposed to other infections, leads to high incidences of the disease.

The association between inadequate diet and the incidence of tuberculosis had been recognised long before McKeown was born, but there has been, and still is, little consensus concerning which particular constituent of food is vital for the prevention of clinical tuberculous disease. Fats, proteins, carbohydrates and vitamin C have all had their advocates, but there is little evidence to suggest that any one dietary component is essential. Matossian, indeed, has recently argued that high tuberculosis mortality may have been the result of eating the wrong type of food. Citing evidence which claims that mice can develop tuberculosis from eating toxic grain, she suggests that the decline in tuberculosis mortality in London in the first half of the nineteenth century may have been the result of a decline in bread consumption in favour of the potato. This rather simplistic, mono-causal explanation has deservedly been

heavily criticised by Hardy who points out, among other things, that the evidence for tuberculosis mortality decline before 1850 is scant and that grain consumption theories cannot adequately account for the wide regional, sex and age variations in tuberculosis mortality.⁴⁰

Matossian's work, however, does highlight the complexity of trying to unravel the riddle of the decline of tuberculosis. Other writers have suggested that it is not so much the constituents or the amount of diet that is necessarily important, but rather the maintenance of a reasonable level of diet. Thus a relatively well fed population might experience an increase in mortality if its food intake declined even marginally. Such explanations were often invoked to explain increased mortality among civilians during wars.⁴¹

Whatever the merits of the respective arguments, the strong links between poverty and tuberculosis alone point to diet being a critical factor. As has been noted, tuberculosis mortality began to decline during the last half of the nineteenth century in England and during the last third in Scotland in line with increases in the level of overall real incomes. Between 1869 and 1900 respiratory tuberculosis mortality decreased by 46.7 per

40 M.K. Matossian, 'Death in London 1750-1909.', Journal of Interdisciplinary History Vol. XVI. 1985. pp.183-197.
A. Hardy, 'Diagnosis; death and diet: the case of London, 1750-1909.' Journal of Interdisciplinary History Vol. XVIII. 1988. pp.387-401.

41 J.E. Geddes, 'Prevention.' in Heaf (ed), Symposium of Tuberculosis. op cit. p.238. Such theories naturally beg the question as to what exactly constitutes an adequate diet.

cent in England and Wales, while wages increased by 36.6 per cent and wholesale prices fell by 23.5 per cent.⁴²

There is evidence to support the view that from at least the 1880s wage rates rose faster in Scotland, and particularly in West Central Scotland, than in England and Wales. The region moved from being a low-wage economy to being relatively high-waged. From the limited data available, Hunt has shown that, whereas Central Scotland was a low wage region in the 1850s, by the 1880s wages were approaching the British average and by 1914 were above them. Campbell, too, has pointed out that in the critical heavy-industrial sector, the number of census wage rates higher than the national average increased between 1886 and 1906. He argues that this was a continuing trend which accelerated through the First World War until the recession of 1920.⁴³ Cage and Treble, however, while accepting that the wages of skilled workers did indeed rise during this period, argue that poverty was still the common experience of a large section of the working class, particularly the unskilled, who, being still at the mercy of the trade cycle and seasonal demand, were subject to frequent periods of unemployment. This was particularly so in the 1880s.⁴⁴

42 Statistical Memorandum of the L.G.B. - Public Health and Social Conditions. [Cd 4671] 1909. p.25.

43 E.H.Hunt, Regional Wage Variations in Britain 1850-1914. (Oxford 1973). p.53. R.H. Campbell, The Rise and Fall of Scottish Industry 1707-1939. (Edinburgh 1980). pp.86-90.

44 Cage, 'Introduction' The Working Class in Glasgow. op cit. J.H. Treble, Urban Poverty in Britain 1830-1914. (1979). pp.78-80.

It can, however, be stated with some confidence that the skilled working class, at least, experienced a rise in real wages beginning from the 1880s at the latest and lasting until 1920. As was seen in Figs. 4.(iii), mortality in Glasgow was falling much faster during this period than it was in England and Wales. While there is little evidence which would allow distribution and consumption patterns to be determined, following McKeown it might be assumed that, given the importance of food in working class family budgets, these people were enjoying higher levels of nutritional intake than they were in the 1870s. This would have been particularly so following the introduction of large-scale meat importation in the 1880s.⁴⁵ David Hamilton points to higher nutritional levels, rather than antiseptic practices, as being the real secret of Lister's surgical successes at the Glasgow Royal Infirmary from the late 1860s, although he supplies no evidence for a local improvement in diet. Cage also argues that the decline in the incidence of rickets in Glasgow towards the end of the century was not due to any improvement in the amount of sunlight, as the smoke problem was increasing at this time, but rather to higher nutritional intake.⁴⁶ Oddy, however, provides a note of

45 Chalmers, reportedly, attributed the decline in Glasgow to increased meat importation. MacGregor, Public Health in Glasgow op cit. p.86. Cronje, too, draws attention to meat importation as a contributing factor in the decline. 'Tuberculosis mortality decline.' in Woods and Woodward (eds) Urban Disease and Mortality Decline. op cit. p. 98. Meat consumption cannot, however, be accorded too much weight as large-scale importation post dated the onset of the decline of tuberculosis.

46 D.Hamilton, 'The nineteenth century surgical revolution - antiseptics or better nutrition?' Bulletin

caution by claiming that nationally, there was no discernible changes in the pattern of food consumption at the end of the century.⁴⁷

Improvement in diets over the period 1880-1920 in urban Scotland might explain why mortality declined faster among women than men. With real wages increasing for a section of the working class, many women may no longer have felt obliged to sacrifice their food in favour of the breadwinner. However, it could equally be argued that female mortality was decreasing faster than male mortality despite still making such sacrifices. There is ample evidence to suggest that such practices were still widespread among a large section of the working class in the early twentieth century.⁴⁸

Bryder has also argued that undernourishment resulting from long-term unemployment in the 1930's retarded tuberculosis mortality decline in the depressed areas.⁴⁹ Following Webster, she maintains that undernourishment must have been more widespread than the official reports would suggest.⁵⁰ Two large scale

of the History of Medicine. 56 (1). Spring 1982. pp.30-40. Cage, The Working Class in Glasgow. op cit. p. 66.

47 D.J. Oddy, 'Working class diets in late nineteenth century Britain.' Economic History Review. 2nd Series Vol. XX111 1970. pp.314-323. Using data pertaining to working class diets in various regions, including Scotland, he concluded that 'we should be less certain that rises in real wages or lower food prices led to increased food consumption.'

48 M. Pember Reeves, Round About a Pound a Week. (London 1913). L.Oren, 'The welfare of women in labouring families in England, 1860-1950.' in M.S. Hartmann and L. Banner (eds), Clio's Consciousness Raised. (New York 1974).

49 Bryder, Mountain op cit. pp. 113-115.

50 C. Webster, 'Healthy or hungry thirties?' History Workshop Journal. op cit. pp.110-129. 'Health, welfare

investigations commissioned by the N.A.P.T. showed that high incidences of tuberculosis were associated with inadequate diets.⁵¹ Although Hart and Wright could find little real evidence of widespread malnutrition, they concluded that the retardation in tuberculosis mortality decline amongst young adults during the first three decades of the present century in England and Wales was partly caused by the stagnation of real income levels after 1900.⁵² In his Tyneside Inquiry, Bradbury demonstrated that poverty caused tuberculosis principally through malnutrition and overcrowding. There is also some Scottish evidence to link malnutrition to tuberculosis incidences in the interwar years. Forty-three per cent of all patients admitted to Robroyston in 1924 were described as being in a poor nutritional condition. However, given that most were advanced cases, it is likely that their poor nutritional state was caused by the disease rather than vice versa. By 1931, in the trough of the depression, the number admitted in a poor

and unemployment during the depression.' Past and Present. (109) 1985. pp.204-230.

51 F.C.S. Bradbury, Causal Factors in Tuberculosis. op cit. P.D. Hart and G.P. Wright, Tuberculosis and Social Conditions in England (with Special Reference to Young Adults). (1939).

52 In their conclusion they suggested that the retardation had been caused by:

- 'a) a predisposing factor; that is, young adults are particularly sensitive to changes in social conditions. (They do not, however, tell us why this should have been so.)
- b) general determining factors; most importantly, the check to the rise in the standard of living about 1900, accompanied by a set back in general housing conditions.
- c) local determining factors; of these, housing appears to be of great importance. The part played by other factors in poverty is less clear.' ibid. p.129.

nutritional condition had fallen to 39 per cent.⁵³ There is, however, stronger evidence to suggest that by the 1930s malnutrition was not such an important a determinant of high tuberculosis rates as it had once been. In 1936, for example, Glasgow School Medical Inspectors claimed that,

the heights and weights in nearly every age group (of children) are higher than any recorded during the past fifteen years, and further that the figures relative to the average are definitely the best recorded since 1919.⁵⁴

Stein's work on tuberculosis in Glasgow also provides evidence to support the contention that the influence of malnutrition was declining.⁵⁵ Using multiple regressions to analyse the contributions of a number of social factors on the incidence of tuberculosis in the thirty-seven wards of Glasgow, she concluded that in the 1930's poverty and unemployment accounted for only a small proportion of cases. Tuberculosis incidence, she claimed, was much more closely correlated with housing conditions.⁵⁶

It has been argued that the strongest evidence that an association exists between malnourishment and incidences of tuberculosis has been provided by the experience of civilian populations during wartime. For example, the mortality rates in German cities almost

53 M.O.H. Reports Glasgow 1924. p.309, 1931. p.324.

54 Public Health. April 1936. p.244.

55 L. Stein, 'Tuberculosis and the "social complex" in Glasgow.' op cit.

56 Stein's work on housing conditions and tuberculosis will be more closely examined in the next section.

doubled from 157 per 100,000 of population to 287 between 1913 and 1918. There was not such a marked rate of increase in rural Bavaria. When the blockade was lifted mortality rates in the cities fell to 137 by 1921. Following the 1922 depression, they rose again to 152.⁵⁷ It has been argued that tuberculosis mortality rates in neutral Denmark were also affected by the First World War. Mortality increased up until 1917 but resumed its decline thereafter. Before 1917 Denmark had been exporting large amounts of food to Britain and Germany. With the intensification of submarine warfare and the blockade, however, more food was consumed at home after 1917. It has been argued that tuberculosis mortality thus mirrored food consumption patterns.⁵⁸ During the First World War there was an increase in respiratory tuberculosis mortality of 152 per cent among men and 106 per cent among women in lunatic asylums in England and Wales. Over forty per cent of the increase in tuberculosis among the population as a whole in 1917 was accounted for by the mentally ill. This rapid increase has been blamed on the fact that inmates' diets were reduced. However, although rarely mentioned in the literature, there was also much greater crowding in the asylums at this time.⁵⁹ Daniels reported from France during the Second World War that in the south there was a

57 McDougall, Tuberculosis op cit. p.359. Crofton and Douglas, Respiratory Diseases. op cit. p.234.

58 I. Leitch, 'Diet and tuberculosis.' Proceedings of the Nutritional Society. (3) 1945. p.160. Dubos, The White Plague. op cit. p.141. and Appendix C.

59 Greenwood, Public Health. 1928. p.355. Smith, Retreat op cit p.171.

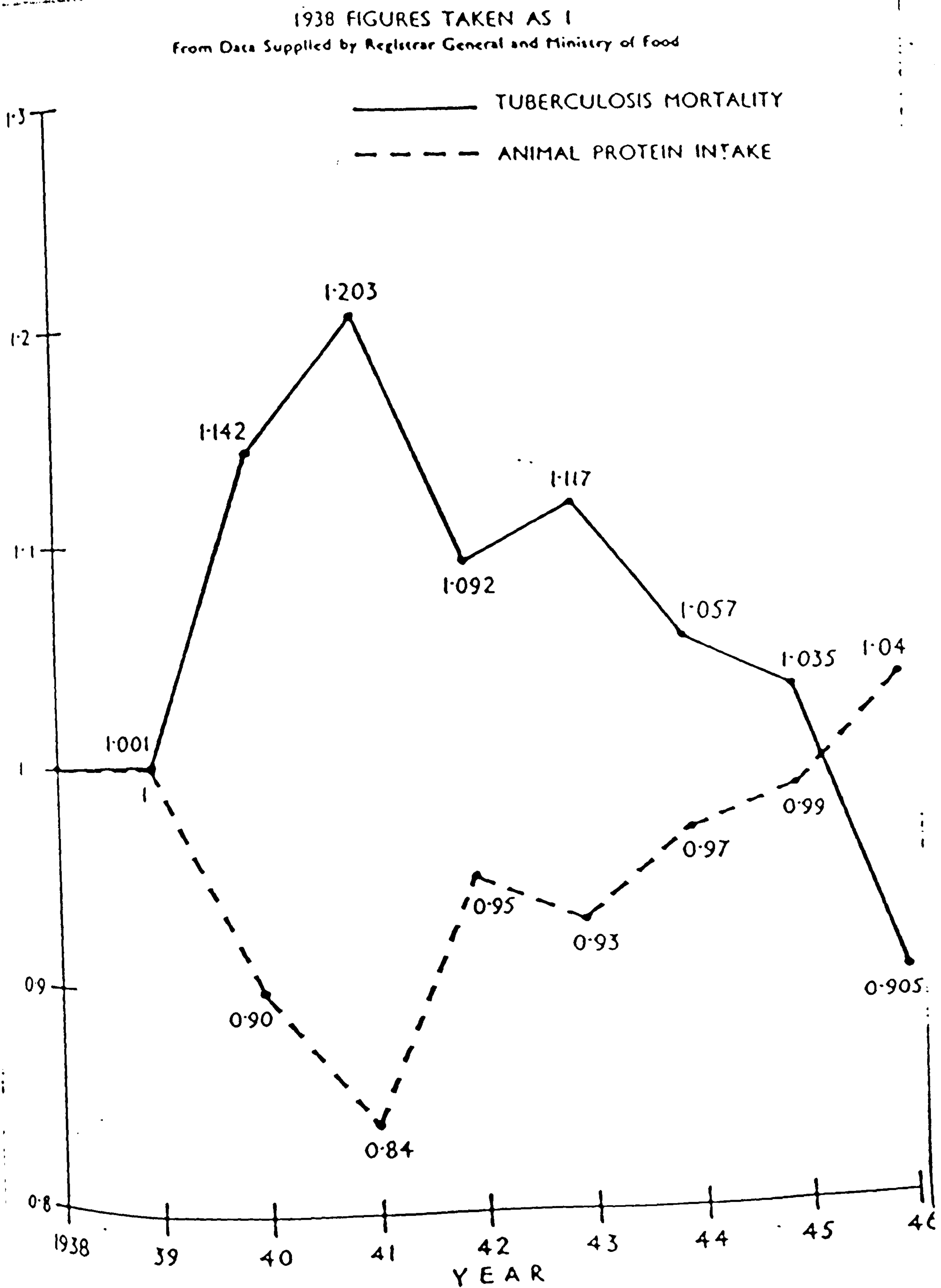
continuous rise in tuberculosis mortality rates where the food situation was bad, but in Brittany, where the food situation was relatively good, death-rates fell steadily throughout the war.⁶⁰ Perhaps the most striking piece of evidence relating diet to tuberculosis was that produced in Tubercle in 1948. Reproduced in Fig. 4 (x), it is shown that there was an almost perfect inverse correlation between the movement in tuberculosis mortality and levels of animal protein intake. The problem, however, with such a close correlation is that it is too perfect. The majority of people who died from respiratory tuberculosis did so after a long period of illness. One would therefore have expected a time lag of about three years in the correlation between tuberculosis mortality and food intake. This aspect of respiratory tuberculosis has often been neglected by those who have sought to link rises in mortality to immediate changes in food consumption and must render their conclusions problematic.

Bryder has drawn on the English tuberculosis experience to challenge Winter's thesis that civilian health improved during the First World War because of increased dietary intake.⁶¹ Citing authorities who hold that respiratory tuberculosis is largely a deficiency

60 M. Daniels, Tubercle. 1946. p.18.

61 Bryder 'World War One - healthy or hungry?' History Workshop Journal op cit. Winter's otherwise convincing reply to Bryder's criticism of the war as being beneficial to the health of the civilian population unfortunately does not address the problems presented by tuberculosis mortality. History Workshop Journal. (26) Aut. 1988. pp.163-173.

Fig. 4(x). - Tuberculosis mortality and first class protein intake, England and Wales, 1938-1946.



disease, she argues that, because tuberculosis mortality increased, malnutrition must have been more prevalent than Winter would have us believe. She further argues that tuberculosis declined during the Second War because diets were improved as a result of more efficiently organised rationing.

The major differences between the two wars (apart from the 1918 influenza epidemic) was clearly related to nutritional levels : above all rationing operated much more successfully in the Second World War.⁶²

Scotland's experience of respiratory tuberculosis mortality during the two wars, however, serves to undermine this argument. Mortality rates were stable during the First War, while in Glasgow they continued to decline. During the Second War mortality increased dramatically in Scotland, largely as a result of Glasgow's extremely poor record. Assuming that the nutritional intake of the population of Scotland was not the opposite of that experienced by the rest of Britain during the two wars, Bryder's nutrition-led criticism of Winter's thesis would, therefore, seem to fail in the case of respiratory tuberculosis.

Winter, for his part, ascribes the rise in tuberculosis mortality in England and Wales during the First War to increased overcrowding and munitions work.

There seems little doubt that the recrudescence of mortality due to respiratory diseases in wartime Britain was aided and abetted by the deterioration in its housing stock between 1914 and 1918. In addition, the concentration of a large working population in munitions factories working 10-14 hours per day entailed similar

⁶² ibid p.149.

costs in ill health and lower case-recovery rates of those unfortunate enough to have contracted tuberculosis, either before or during the war.⁶³

He also cites the disruption caused by the war to the anti-tuberculosis schemes as a factor in accounting for mortality increase.⁶⁴ Bryder, quite correctly, points out that the latter could not have been a significant factor for the simple reason that such services did not exist to any significant extent before the war. Glasgow's experience of the disease during the First War also raises serious questions about the former explanation. Glasgow was a major centre of munitions manufacture and had a long history of endemic overcrowding. Despite these handicaps, respiratory tuberculosis mortality declined. Winter's thesis, therefore, also fails to account for Glasgow's tuberculosis mortality experience during the First War. His theory, in fact, might better explain the city's experience during the Second War. He would have been wiser, perhaps, to heed his own warning that,

it is always dangerous to isolate any one environmental variable and to declare it was the key element influencing trends in vital statistics.⁶⁵

Nutritional explanations cannot account for the high levels of tuberculosis prevailing in Scotland in the

63 J.M. Winter, The Great War and the British People. op cit. p.244. Smith, too, appears to favour this view. 'Those worst hit among them (young women) were apparently new industrial workers, overcrowded in factories, overcrowded in lodgings, severely fatigued and newly exposed to dust and fumes.' Retreat op cit. p.222. See also below, 'Employment'. Such an explanation might also be used to account for the high incidence of tuberculosis in German cities during World War One.

64 Winter, The Great War op cit. p.211

65 ibid p.139.

1940s. There is no evidence to suggest that the high levels of mortality and morbidity amongst young women in Glasgow was the result of receiving insufficient nourishment. On the contrary, it has been argued that rationing improved the dietary intake of the population, even although certain items, such as fresh fruit, were scarce.⁶⁶ Such items, however, had never formed a significant part of working class diets. In terms of overall mortality, the general health of the Scottish population improved during the Second War. Increased respiratory tuberculosis mortality was very much the exception.⁶⁷ Contemporary reporters on the tuberculosis 'crisis' in Scotland, although aware of the links between the disease and malnutrition, dismissed diet as a possible factor in accounting for the increased incidence of the disease.

In so far as Scotland is concerned the Committee knows of no evidence which would seem to indicate unequivocally that in recent years the nutritional state of the Scottish people has so deteriorated that malnutrition must be regarded as a factor of contributing significance to the increase in the incidence of tuberculosis in the Scottish population.⁶⁸

Overcrowding, rather than undernourishment, was seen as the major factor contributing to Scotland's and, in

66 J.S. Westwater, 'Tuberculosis in Scotland: the present position.' Proceedings of the Nutritional Society. (3) 1945. p. 72. S. Laidlaw and D. MacFarlane, 'The causes underlying the recent increased incidence of and mortality from tuberculosis in Glasgow.' B.M.J. Sept. 22nd 1941. p.436.

67 P.L. McKinlay, 'The recent changes of tuberculosis mortality in Scotland.' Health Bulletin Oct. 1948 V1. No.4. p.67.

68 Scottish Health Services Council's Committee on Tuberculosis 1951. op cit. p.39.

particular, Glasgow's high incidences of tuberculosis at this time.

(b) The Scottish Experience.

There is strong evidence to suggest that the trend towards parity of Scottish and English respiratory tuberculosis mortality rates was underpinned by the faster rates of rising real incomes being enjoyed by some sections of the West of Scotland working class between 1880 and 1920. While there is little evidence to support the thesis that diets were also improving amongst the majority of the population, it would seem reasonable to assume that it was principally through increased nutrition that higher real wages influenced tuberculosis mortality rates at this time.

Given that rising real wages were the driving force behind the retreat of respiratory tuberculosis it would also seem reasonable to assume that the cessation of this trend after 1920 was the reason why Scotland's, and particularly Glasgow's, position began to deteriorate thereafter. However, other depressed areas such as Liverpool and Manchester both demonstrated that respiratory tuberculosis mortality could continue to decline during hard times. Further, there is no evidence to show that inadequate diet accompanied the high rates of the disease present in Glasgow during and after the Second World war. It would, therefore, seem that malnutrition was a factor of declining importance as the twentieth century progressed.

5. HOUSING

a) General Discussion

When it became generally accepted that tuberculosis was, indeed, an infectious disease, greater conviction was given to the belief that a close association existed between overcrowding, whether measured in terms of persons per room, house or acre, and the incidence of the disease. It had originally been thought that the causal link between overcrowding and high incidences of tuberculosis was simply that in a densely populated environment, where large families were huddled together in single rooms, there was greater opportunity for infection. In the 1920's, when more became known of the aetiology of the disease, the emphasis shifted from infectivity as an explanation to one which argued that poor living conditions lowered resistance.⁶⁹ This theory was founded on the observation that adult breakdowns occurred on the basis of long-standing infection. That is, it was argued that bad environments can so lower resistance that a previously quiescent lesion can reactivate. It was still argued, however, that overcrowding led to greater repeated exposure if an infectious case was present.

The arguments over exactly how bad housing affected the incidence of tuberculosis tended to obfuscate the issue. Whether explained in terms of increased risk of

⁶⁹ A.K. Krause, Environment and Resistance in Tuberculosis. (Baltimore 1923).

infection or in terms of lowered resistance, and these are not mutually exclusive, it was early discovered that there existed a proven link between housing and tuberculosis. The problem facing the social investigators was how to establish whether or not the link was causal.

The pioneering work of Russell and Chalmers in Glasgow in the use of small area statistics proved that mortality was highest in the overcrowded wards of the city. In an early study, Chalmers discovered that, with only one exception, the districts in the city with a tuberculosis death-rate in excess of the mean also had a room-density in excess of the mean. He also noted that, although respiratory tuberculosis mortality was declining, it was declining fastest in those wards which had a decreasing room density.⁷⁰ In a much quoted study he further established in 1901 that a direct link existed between levels of overcrowding and the incidence of respiratory tuberculosis.

Fig. 4.(xi) Respiratory Tuberculosis and Housing in Glasgow 1901.⁷¹

<u>population</u>	<u>Mortality per 1,000</u>
1 Apt.	2.5
2 Apt.	1.8
3 Apt.	1.2
4 Apt. +	0.7

Although he made no attempt to dissociate the effects of overcrowding from poverty, in a later study he found that

⁷⁰ A.K. Chalmers, The Distribution of Tuberculous Diseases in Glasgow With Observations on the Relation of Phthisis to Room Density. (Glasgow 1896). pp. 19 and 22.

⁷¹ M.O.H. Report Glasgow 1901. p.53. Maxwell Williamson, Edinburgh's M.O.H., also noted a similar trend between house size and tuberculosis in the other Scottish cities and major towns. 'Housing and tuberculosis.' B.J.T.B. July 1915. p.112.

female mortality was more adversely affected by house-size than male.

Fig. 4.(xii) Respiratory Tuberculosis and Housing by Sex in Glasgow 1909-12.⁷²

	<u>Mortality per 1,000 population.</u>	
	<u>Female</u>	<u>Male</u>
1 Apt.	1.9	1.6
2 Apt.	1.27	1.25
3 Apt.	0.78	1.05
4 Apt. +	0.49	0.90

It was argued that female mortality rates were more sensitive to housing conditions because male rates were also determined by conditions at work. Bearing in mind that female mortality fell faster in urban than in rural areas in the last third of the nineteenth century, it could also be argued that improved housing conditions, by benefiting females, was an important factor in mortality decline. McKeown dismisses improvements in housing conditions as playing any part in the nineteenth century mortality decline, but there is evidence that such improvements as there were reflected themselves in reduced mortality statistics. In Glasgow, for example, overcrowding increased from a city average of 202 persons per 100 rooms to 210 persons in the decade 1860-70, while the proportion of the population inhabiting one apartment houses rose from 34 to 41.3 per cent. Tuberculosis mortality remained stationary at a peak of 400 per 100,000 of population at this time. During the next thirty years overcrowding fell to a level of 187 persons per 100 rooms and the proportion inhabiting one apartment

⁷² A.K. Chalmers, 'The house as a contributory factor in the death-rate.' Proceedings of the Royal Society of Medicine. VI (2) 1913. p.168.

houses to 25.1 per cent. At the same time tuberculosis mortality fell dramatically.

However, although trends in tuberculosis mortality in Glasgow reflected levels of overcrowding, there is strong evidence to support the view that improved housing conditions were not the principal reason why mortality declined in the last third of the nineteenth century. As Newsholme pointed out, levels of overcrowding failed to explain why mortality levels in Glasgow were not significantly higher than in other British cities, for, although some improvement had taken place, the city was still grossly overcrowded in comparison to others. Despite such a handicap, the statistics in Fig. 4.(xiii) show that Glasgow actually had a much lower death-rate than the much less overcrowded Belfast and Liverpool and a rate not much higher than London and Manchester.⁷³

⁷³ Care must be exercised in any comparison of Nineteenth Century British cities. Difficulties are caused because legal boundaries did not always coincide with built up areas. Glasgow, for example, was successful in absorbing the middle-class areas on its periphery, while Manchester did not encompass the working-class district of Salford and Liverpool did not include Birkenhead. Such differences skewed class distribution and should be borne in mind when comparing municipal statistics. See, T. Hart, 'Urban growth and municipal government.' in Slaven and Aldcroft (eds), Business, Banking and Urban History. (Edinburgh 1982).

Fig. 4.(xiii) Overcrowding and Tuberculosis Mortality in Major British Cities - 1912⁷⁴

	<u>Belfast</u>	<u>Manch.</u>	<u>L/pool</u>	<u>B/ham</u>	<u>London</u>	<u>Edin.</u>	<u>Glasgow</u>
<u>Crowding</u>	5.5	7.0	0.5	0.8	16.8	31.1	53.6
<u>TB Deaths</u>	252	136	160	114	135	96	147

Such evidence suggests that the reduction in overcrowding was not the most important factor behind mortality decline in the late nineteenth century. Increased natural resistance coupled with a general improvement in diet must have been much more influential at this time. Nevertheless, it could still be argued that as the benefits of increased resistance and improved diet became more widespread, housing became a more significant factor in explaining differences in incidence rates as the twentieth century progressed.

The relationship between housing and tuberculosis incidence was not confined to urban Scotland. The slower decline of mortality or, in such cases as Lewis, the increase in mortality, in the Highlands and Islands was often attributed to the poor quality of housing and, in particular, to the notorious 'black houses'. As already noted, Doig blamed the appalling conditions prevailing in such houses for allowing the rapid increase in respiratory tuberculosis mortality on Lewis at the turn of the century. In 1911 Inverness had the highest rate of

⁷⁴ McDougall, Tuberculosis op cit p.353. 'Crowding' refers to the percentage of population living more than two per room. 'TB Deaths' is the tuberculosis mortality rate per 100,000 living. Newsholme's figures are problematic. According to the Registrar General's Report, respiratory tuberculosis mortality in Edinburgh in 1912 was 126 per 100,000 of population. In Glasgow the rate was 150.

respiratory tuberculosis mortality in Scotland, 136 per 100,000 of population. One informed commentator had little doubt as to why this should have been so;

With regard to housing accommodation and sanitary arrangements generally, I may say that, in the course of my experience on the Poor Law Commissions, I have visited the homes of paupers in the principal towns of England, Scotland and Ireland and that I have never witnessed urban paupers living under worse conditions than those obtaining in Inverness.⁷⁵

Dr. A. Bremner, Sutherland's M.O.H., also blamed poor housing for causing high incidences of the disease in the Highlands.

We know what conditions we have to strive against in this county if we are to lessen the incidence of phthisis. The most important are overcrowding, dampness, want of adequate provision for light and fresh air, dirt and clay floors in the houses. More sanitary houses are essential.⁷⁶

Forty-five years on there were still complaints that the housing problem in Sutherland was 'really urgent.'⁷⁷

Two examples from England also pointed to a very close correlation between housing conditions and respiratory tuberculosis incidences. It was reported from Salford in 1918 that respiratory tuberculosis mortality was 522 per 100,000 among people living in 'back-to-back' houses, but was only 280 among those living in better houses. In Liverpool, a death-rate of 400 per 100,000 among a population living in slum housing was cut to 190

⁷⁵ J. Jeffrey, Report on the Administration of Outdoor Relief in Inverness 1910. op cit. p.11.

⁷⁶ Dewar Report. Vol.2. Minutes of Evidence. [Cd 6920] 1913. p.183.

⁷⁷ B.S. Simpson, 'Tuberculosis in Sutherland.' E.M.J. 1946. p.508.

when they were rehoused in new blocks with better ventilation and more open spaces.⁷⁸

The link between small housing and tuberculosis incidences was recognised by the 1917 Royal Commission on Housing in Scotland which heard evidence from McVail, Chalmers, Reid, and Dewar, who, all being involved in the anti-tuberculosis movement, were convinced that the disease could not be tackled while slum housing remained so prevalent. The Report, which was scathing of Scotland's appalling housing conditions and which called for state intervention as the only possible solution to the problem, recommended that fifty per cent of one-roomed and fifteen per cent of two-roomed houses ought to be replaced.⁷⁹ Despite this, the proportion of Glasgow families inhabiting one-roomed housing only fell from eighteen per cent in 1921 to fifteen per cent by 1951.⁸⁰

In an inquiry into the incidence of respiratory tuberculosis in the East End of Glasgow in 1926, J.A. Wilson also noted that there was a higher correlation between overcrowding and female death-rates than there was for overcrowding and male rates.⁸¹ Like Chalmers, he attributed this to the fact that whereas employment played a role in determining male rates of infection, female rates were likely to be more directly influenced

78 B.R. Clarke, Causes and Prevention of Tuberculosis. op cit. p.144.

79 Report of the Royal Commission on Housing in Scotland. [Cd 8731] 1917. pp.90-94, 347.

80 Cunnison (ed), Third Statistical Account of Scotland - Glasgow. (Glasgow 1958). p.864.

81 J.A. Wilson, 'Pulmonary tuberculosis in the Eastern district of Glasgow and its early recognition.' G.M.J. July 1927. pp.26-40.

by living conditions alone. Wilson also reported the disturbing fact that the disease was tending to become one mainly of young adult life. In the 1920s incidence-rates for young adults increased, while those of younger and older age groups fell substantially. As already noted, Hart and Wright identified housing as the prime local factor in retarding mortality decline among young adults in England after 1900.

Bradbury's Jarrow investigation also dealt extensively with the association between overcrowding and tuberculosis. His work dispelled some of the traditional beliefs concerning the two. He established that overcrowding existed before the onset of the disease in over ninety-two per cent of all cases, thus refuting the idea that the tuberculous were compelled to gravitate towards inferior housing through economic necessity. By comparing families of similar size, he found that those overcrowded were more susceptible to the disease, concluding that family size per se was not a direct causal factor. He further demonstrated that the association between overcrowding and multiple tuberculosis, that is, more than one case in the family, was one of cause and effect. While conceding that the relationship between overcrowding and tuberculosis was not universal, he summed up his chapter on housing by stating that,

the evidence shows that overcrowding does in fact contribute to the prevalence of tuberculosis, although being evidence and not statistical proof, it is impossible to reach a degree of certainty on this point. It is

considered that the evidence submitted has sufficient statistical value to establish beyond all doubt that overcrowding is a factor of definite importance in contributing to the prevalence of tuberculosis in the area dealt with.⁸²

Bryder claims that,

Bradbury considered the relationship between tuberculosis and undernourishment to be statistically more significant than that between tuberculosis and overcrowding.⁸³

but she must have misinterpreted his data. In a chart showing the relative importance of undernourishment and other conditions associated with tuberculosis, overcrowding, in fact, is indicated as being of equal importance.⁸⁴

Bradbury, like others before and since, could not determine the extent to which undernourishment and overcrowding contributed to incidences of the disease, nor which was the more significant, because both were intimately caught up in the poverty complex. In most British cities, those who occupied the worst houses were generally also living in the worst conditions of poverty. The one notable exception to this rule, however, was Glasgow. Although poverty was widespread in the city, particularly in the 1930s, the people of Glasgow did not necessarily occupy small houses because they could not afford larger ones, but rather because there were so few larger houses available. Glasgow, therefore, provided a unique opportunity to study the association between

82 Bradbury, Causal Factors in Tuberculosis. op cit. p.32.

83 Bryder, Mountain. op cit. p.118.

84 Bradbury, Causal Factors in Tuberculosis. op cit. p.35.

overcrowding and tuberculosis because only there was it thought possible to separate housing from the poverty complex.

Laidlaw's 1934 review of all deaths from respiratory tuberculosis among young adults in the East End between 1928 and 1932 revealed that seventy-seven per cent had occupied a one- or two-roomed dwelling.⁸⁵ Less than one in ten of his inquiry group had a separate bedroom, while fully sixty-seven per cent shared a bed with one or more other persons, that is, all these people were sleeping with someone dying from respiratory tuberculosis. One fifth of the young adult victims had received 'definite contact' infection. In other words, they had most likely been infected by a member of their own family. Laidlaw concluded with a plea for more rehousing of tuberculous families and the granting of financial assistance to help meet the cost of higher rents.

At the same time as Laidlaw was conducting his investigations, R.J. Peters, a Glasgow Tuberculosis Officer, concluded a paper delivered to the Annual Conference of the N.A.P.T. by claiming that, 'the specific influence of overcrowding (on respiratory tuberculosis) is much less evident than one would expect.'⁸⁶ His statement was based on the statistics set out in Figs. 4.(xiv) and 4.(xv).

85 S.A. Laidlaw, The Epidemiology of Young Adult Phthisis. 1934. op cit. p. 108.

86 Tubercle Sept. 1933. p.569.

Fig. 4.(xiv) Notification-Rate Respiratory Tuberculosis in Relation to Overcrowding - Glasgow 1931-3.⁸⁷

<u>Persons per Room</u>	<u>Notifications per 100,000</u>
Not more than 2	127
Not more than 3	151
Not more than 4	135
More than 4	141

Fig. 4.(xv) Tuberculosis Mortality Rates in Relation to Persons per Room and Size of House - Glasgow 1931-3.⁸⁸

<u>Number of apartments</u>	<u>Respiratory</u> (persons per room)			<u>Non-respiratory</u>		
	<u>1-2</u>	<u>2-3</u>	<u>3+</u>	<u>1-2</u>	<u>2-3</u>	<u>3+</u>
1	153	139	122	29	48	58
2	104	117	92	29	41	40
3	72	88	74	18	24	28
4	58	65	83	16	23	42

Fig. 4.(xiv) shows that the incidence rates for respiratory tuberculosis are higher where there are three or less persons per room than where there are more than four. Fig. 4.(xv) reveals that, while there is a clear association between house-size and respiratory and non-respiratory tuberculosis, there is no correlation between persons per room and the mortality rates for respiratory tuberculosis, although there is for non-respiratory tuberculosis. Thus in one-apartment houses occupied by two or less people the death-rate for respiratory tuberculosis is 153 per hundred thousand, but where occupied by three or more it falls to 122. This evidence would seem to completely invalidate Laidlaw's thesis.

J.S. Westwater, Medical Officer of the Department of Health for Scotland blamed high wartime mortality rates in Scotland after 1939 on housing conditions and argued

⁸⁷ R.J. Peters quoted in P.L. McKinlay, 'Tuberculosis mortality and overcrowding in Scotland.' Health Bulletin. Vol. V. No. 3. May 1947.

⁸⁸ ibid.

that the country's experience was a reflection of her deteriorating position in the interwar years.⁸⁹ However, his colleague, P.L. McKinlay, the Department's Head Statistician, was later to claim, after Peters, that no correlation, in fact, existed between overcrowding and the incidence of respiratory tuberculosis in Scotland.

The geography of pulmonary tuberculosis mortality is not at all, far less principally, determined by conditions of housing.⁹⁰

Although he admitted that his data were not ideal, his findings issued a clear challenge to those who advocated better housing as a precondition for eliminating tuberculosis.

The challenge was taken up by Lilli Stein of the newly created Department of Social Medicine at Edinburgh University in 1952. In an earlier study of Edinburgh, Stein claimed to have established a clear correlation between overcrowding and tuberculosis mortality, but had made no attempt to dissociate housing from poverty.⁹¹ McKinlay's findings prompted her to undertake a more sophisticated and ambitious study in Glasgow by analysing social data relating to the thirty-seven wards of the city between 1931 and 1947.⁹² Using multiple regressions, she correlated death- and incidence-rates of tuberculosis

⁸⁹ J.S. Westwater, Proceedings of the Nutritional Society. op cit. pp. 165-72.

⁹⁰ McKinlay, 'Tuberculosis mortality and overcrowding.' op cit. p.38.

⁹¹ L. Stein, 'A study of respiratory tuberculosis in relation to housing conditions in Edinburgh.' British Journal of Social Medicine. (4) 1950. pp.143-169.

⁹² L.Stein, 'Tuberculosis and the "social complex" in Glasgow.' British Journal of Social Medicine. (6) 1952. pp.1-48.

with ordinary crowding (persons per house), overcrowding (persons per room), poverty (families on public assistance), and unemployment. She claimed that by so doing she could determine the separate contribution of each social malaise to incidences of the disease and hence untangle the social complex. Her study showed that respiratory tuberculosis incidence and mortality rates were highly correlated with both overcrowding and ordinary crowding, but only slightly correlated with poverty and unemployment.⁹³ 'Ordinary density of dwelling occupation, together with overcrowding,' she concluded, 'represents the dominant influence in infection and in death from this disease.' She further found a higher correlation between mortality and overcrowding than between incidence and overcrowding, suggesting that the disease was also more fatal under overcrowded conditions.

She later repeated her Glasgow study using census data from 1951.⁹⁴ This time she calculated that, although ordinary crowding was highly correlated with the disease, overcrowding was not. She defended her use of ordinary crowding, that is, persons per house, as a legitimate index of housing standards by arguing that in the small Scottish houses families tended to congregate around the

93 Benjamin could not replicate Stein's results using statistics pertaining to London between 1931-3. He concluded that as it was rare to find overcrowding in the absence of poverty, it was impossible to distinguish between the two. 'It was not possible to find any new factors related to mortality which were independent of economic status.' B. Benjamin, Health and Vital Statistics. (1968). pp.119-123.

94 L. Stein, 'Glasgow, tuberculosis and housing.' Tubercle. Aug. 1954. pp.95-105.

fire in the kitchen-living room. Be this as it may, her index can be more securely defended on the grounds that the housing problem in Glasgow was so extensive. In 1951 over forty-six per cent of all households in the city occupied a one- or two-apartment house.

Although it would appear that the findings of the various investigators were incompatible, much of the controversy can be explained by the fact that they were often employing different spatial units.⁹⁵ Given that they were comparing a common variable, overcrowding, against a less common variable, tuberculosis mortality, it is unlikely that a consistent correlation would be found on a national scale.⁹⁶ Such being the case, the small area studies which made use of ward incidence and mortality rates were the more valuable. Concentrating on these, it can be seen that Stein's second investigation actually accords with the earlier work of Peters; that is, although an association exists between both

95 There is no evidence to suggest that the investigators were serving their employers' self-interested ends, as has been claimed some health statisticians did in the 1930's. Laidlaw, Peters and McMillan all worked for Glasgow Corporation, while Westwater and McKinlay were at the Department of Health. Their common employers did not lead to their adopting any particular line over the controversy. Although Hart and Stein, as socialists, undoubtedly had an axe to grind, one which they hoped would be used to cut overcrowding, it is most likely that the different results achieved were due to the complexity of the subject.

96 The pioneering British epidemiologist, Major Greenwood, concluded an investigation into housing and tuberculosis in London conducted on behalf of the League of Nations in despair, claiming 'that only by an exact study, upon a small scale, can truth be reached. The massed data of official statistics are too complex to yield any decisive answers. The task before us is much more difficult than we suppose.' Quoted in McDougall, Tuberculosis. op cit. p.357.

respiratory and non-respiratory tuberculosis incidences and overcrowding as measured by persons per house, there is no correlation between respiratory tuberculosis and overcrowding as measured by persons per room. There are a number of reasons why this was so.

The high correlation between overcrowding and non-respiratory tuberculosis supplies one important clue. Most overcrowding would have been caused by children. Before the onset of puberty mortality from respiratory tuberculosis is relatively low. Children, on the other hand, are particularly vulnerable to non-respiratory tuberculosis, both of human and bovine origin. Overcrowding, as a result, is highly correlated with non-respiratory tuberculosis simply because there are more children present in overcrowded houses. Because the incidence of tuberculosis is age-specific it is unlikely that there ever would be a close correlation between the incidence of respiratory tuberculosis and overcrowding as measured by persons per room. If, for example, there were two streets in Glasgow, one housing mainly young adults living in non-overcrowded conditions and one housing mainly children living in overcrowded conditions, then it is probable that respiratory tuberculosis rates would be higher in the first street. Peters did not define who precisely constituted a 'person', neither did the other investigators. The Housing Act (Scotland) 1935 laid down a standard whereby children under the age of ten were counted as half a person, children under one year were

not counted at all.⁹⁷ It is not clear whether this definition was adopted by Stein or McKinlay.

The low correlation between overcrowding and respiratory tuberculosis can also be explained by the fact that their analysis does not take into account overcrowding as measured by persons per acre. The Scottish tradition of tenement building made Glasgow the most densely populated as well as the most overcrowded city in Britain. Nor does their work take into account the type of dwelling. Tenement closes were notoriously dark and ill-ventilated, allowing bacilli to live longer than would have been the case elsewhere.⁹⁸

A more serious discrepancy, however, was brought about by the rehousing policy. As has been noted, Glasgow Corporation implemented a policy of rehousing tuberculous families in 1929. By 1951, among the wards with the highest respiratory tuberculosis rates were Yoker and Knightswood, Ruchill, Shettleston, Parkhead, and

97 By the same standard, the living-room in Scotland was counted as a bedroom. This was not the case in England. Thus overcrowding in Scotland was even worse than the official figures suggest.

98 Contrary to Bradbury, a study from Glasgow concluded that the 'tuberculous house' was not a myth.

'Statistically there are good grounds for the reluctance most people would have in occupying a room in succession to an infectious tuberculosis person.' Glasgow Herald Sept. 2. 1957. p.9. The study was undertaken by W.F. Tyrrell in the Northern Area of Glasgow. His findings suggested that 'the source of infection in some patients was from contamination of their houses by previous occupants with pulmonary tuberculosis.' He also believed that the problem was particular to Glasgow because tenement flats did not receive much sunlight. He recommended that ultra violet lights be used to kill bacilli in rooms previously occupied by a tuberculosis patient. Scottish Medical Journal Aug. 1957. No.8 pp.315-318.

Pollokshaws These were all areas of major Corporation house building activity in the interwar years. For the city as a whole in 1935, the ratio of tuberculosis affected households to unaffected households was 1:62, in the rehousing schemes it was 1:13.⁹⁹ That is, there were almost five times as many tuberculosis households in the new housing schemes as there was in the rest of the city.

The high incidences of tuberculosis in the new housing schemes could be used as evidence that diet was more influential than overcrowding in accounting for incidences of tuberculosis. Bryder suggests that rehoused families may have skimmed on food in order to meet the costs of higher rents. The effect on health of such economic decisions had been noted by McGonigle and Kirby in the 1930's.¹⁰⁰ In 1933, Stockton on Tees' M.O.H., G.C.M. McGonigle, the Ministry of Health's 'most wanted man', obtained permission from his local authority medical committee to transfer a number of tuberculosis patients to a new housing estate in the town.¹⁰¹ He discovered, to his surprise, that upon so doing the death-rate did not decline. He attributed this to the fact that the higher rents were forcing families to sacrifice food. The fact that the death-rate did not decline, however, is hardly surprising. Given that there was no effective cure for the disease, rehousing could

⁹⁹ M.O.H. Report Glasgow 1935. p.118.

¹⁰⁰ Bryder, Mountain op cit. p.125. G.C.M. McGonigle and J.Kirby, Poverty and Public Health. (1936).

¹⁰¹ For details of McGonigle's precarious relationship with the Ministry, see Webster, 'Healthy or hungry thirties?' op cit.

confer little direct benefit on the already clinically tuberculous. The benefits of rehousing would be enjoyed by the family who would stand a better chance of avoiding infection.

In another interesting experiment McGonigle monitored the health of a rehoused section of the general population in Stockton on Tees over a five year period.¹⁰² Again to his surprise, he discovered that the overall death-rate among the 5,000 persons rehoused in the new estate of Mount Pleasant was significantly higher than that prevailing in the older part of town from which they had been moved. As before, he attributed this phenomenon to the fact that the rehoused population was eating less food. But, while the death-rate from all causes had increased, the death rate from tuberculosis, in fact, was lower. This might suggest that, among the population as a whole, improved housing was a better defence against contracting tuberculosis than higher food intake.

Higher incidences of the disease in the areas where the tuberculous were rehoused could also have been caused by the obvious fact that open-cases were being transferred into the neighbourhood. In a study of all tuberculosis notifications in Northampton between 1921 and 1948, Webb and Stewart concluded that,

¹⁰² G.C.M. McGonigle, 'Poverty, nutrition and the public health.' Proceedings of the Royal Society of Medicine. April 1933. pp.677-687.

the number of affected houses standing next door to one another was significantly greater than the number to be expected had the cases been randomly distributed.¹⁰³

Such findings rendered the policy of rehousing tuberculous families highly contentious. As W.G. Clarke, Edinburgh's M.O.H. asked his colleagues in 1952,

how can we assure ourselves that in trying to protect the family contact we are not making the error of disseminating this infectious disease throughout new housing areas?¹⁰⁴

In the case of Glasgow at least, it is unlikely that the higher incidences of the disease in the new estates was caused by any lowering of nutritional intake in order to meet higher rents. As has been noted, in Glasgow the majority of the population did not live in small houses out of economic necessity. Moreover, of the 2,021 families waiting to be rehoused under the scheme in 1938, only 239 could not afford 'intermediate' rentals.¹⁰⁵ It is clear, therefore, that tuberculosis was exported from the old housing estates to the new. As a result, there would be more tuberculosis in the new, less crowded estates, than in the old, overcrowded estates, even although the disease originated in the latter. This would also have seriously undermined attempts to link

103 J. Webb and A. Stewart, 'The spread of tuberculosis from house to house.' British Journal of Social Medicine. (5) 1951. p.26.

104 Public Health April 1952. p.113. For an account of the popular fear of having a person suffering from tuberculosis as a new neighbour see, Smith, Retreat. op cit. p.120-1.

105 M.O.H. Report Glasgow 1938. p.175. In Glasgow, the opposite of Bryder's argument may well have been the case. That is, being forced to rent smaller accommodation, more money may, in fact, have been available for food among the general population. This would have been particularly true when rents were frozen.

respiratory tuberculosis incidences to housing conditions.¹⁰⁶

Thus, even in a city like Glasgow, where detailed small-area statistics were available and where poverty and overcrowding did not necessarily exist side by side, there was still immense problems involved in trying to prove that overcrowding predisposed towards contracting tuberculosis. In order to avoid using persons per room as an index for overcrowding and to avoid the difficulties presented by the rehousing policy, the problem must be approached from a different perspective. Drawing on the earlier work of Chalmers and Wilson, who noticed that female mortality rates were particularly sensitive to housing conditions, the question must be asked whether the higher female incidences prevalent in the Scottish cities in the twentieth century were related to the preponderance of small houses north of the border. In Glasgow, at least, there is strong evidence to suggest that they were. Fig 4. (xvi) shows the percentage of female respiratory tuberculosis notifications to all notifications by size of house in Glasgow for the four quinquennia 1912-31. Data for the latter years was, unfortunately, unavailable.¹⁰⁷

¹⁰⁶ McMillan, for example, attempted to show that tuberculosis was linked to family size rather than to overcrowding, but his work did not take into account the distortions caused by the rehousing policy. J.S. McMillan, 'An examination of the association between housing conditions and pulmonary tuberculosis in Glasgow.'. British Journal of Preventive and Social Medicine. Vol.2. April 1957. pp.142-151.

¹⁰⁷ After 1931 the statistics, contained in the M.O.H.'s Report, were sacrificed to make yet more room for hospital and dispensary statistics. Such data may thus

Fig. 4.(xvi) Female Notifications Respiratory Tuberculosis as a Percentage of all Notifications by Size of House - Glasgow¹⁰⁸

	<u>1912-16</u>	<u>1917-21</u>	<u>1922-26</u>	<u>1927-31</u>
one apt.	58.5%	48.0%	52.9%	50.4%
two apt.	47.9%	45.4%	48.0%	48.2%
three apt.	44.7%	40.6%	44.8%	45.8%
four apt. +	43.4%	36.7%	50.0%	43.8%

As can be seen, except for the aberration of 1922-6, caused by an unusually high number of female notifications from large houses in 1924, there is a direct and consistent association between size of house and female incidence. As they stand, these figures strongly suggest that smaller housing was the factor determining the higher female rates of mortality in Scottish cities highlighted in Fig. 4.(xvii).

Fig. 4.(xvii) Percentage Female Deaths to all Deaths from Respiratory Tuberculosis.¹⁰⁹

<u>Quinq.</u>	<u>Glasgow</u>	<u>Dundee</u>	<u>Edin.</u>	<u>London</u>	<u>Manch.</u>	<u>L/pool</u>	<u>B/ham</u>
1911-15	45.0%	57.3%	46.0%	38.6%	38.0%	41.7%	38.0%
1916-20	48.5	50.1	50.1	41.8	41.3	43.3	39.5
1921-25	45.5	54.3	48.0	41.7	40.0	41.9	39.1
1926-30	45.1	51.3	46.0	39.8	40.0	39.8	40.6
1931-35	44.6	50.8	43.8	40.6	39.8	41.1	40.7
1936-40	44.0	49.0	44.9	39.1	40.1	42.7	41.0
1941-5	47.5	49.4	47.0	37.3	41.1	40.5	37.1
1946-50	47.4	46.9	43.8	36.9	39.0	40.4	35.8
1951-5	37.0	38.6	36.0	29.4	32.8	36.4	29.2
1956-60	33.3	34.7	28.8	26.2	25.9	29.3	21.8

For all quinquennia 1911-60, the percentage female mortality in the three Scottish cities is higher than in the four English cities. The Scottish statistics reflect the large number of persons inhabiting one- and two-

have become a victim of the trend away from concern for the environment towards clinical medicine noted in the previous chapter.

¹⁰⁸ M.O.H. Reports Glasgow 1912-31.

¹⁰⁹ Registrar General Annual Reports - England and Wales, Scotland. 1911-60.

apartment houses. Thus in 1931, for example, whereas Manchester and Liverpool had two and three per cent of their population living in such houses, the percentages for Glasgow, Dundee and Edinburgh were 55.4, 54.9 and 37.1 respectively.¹¹⁰ However, the relationship between small housing and higher female mortality was not universal. In the period 1921-5, for instance, Edinburgh had a higher proportion of female deaths than Glasgow, but had a lower percentage of its population inhabiting one- and two-apartment houses, forty per cent against sixty-five per cent. Given that small housing is not a monocausal explanation for tuberculosis incidences, one would not expect a perfect correlation, but given the consistently higher number of female deaths in the Scottish cities and given the fact that female incidences were proportionately higher in smaller houses, such statistics do highlight that a definite relationship existed between overcrowding and tuberculosis mortality.¹¹¹

¹¹⁰ Census. The consistently high percentage of female mortality in Dundee was most likely also caused by the practice of employing young female labour in the local jute mills. See below, 'Employment'.

¹¹¹ The association between higher female incidences in smaller houses and the overall high rate of female mortality does not, of course, prove a causal link. It could, for example, be argued that living in small houses was a concomitant of poverty and that high female mortality could be the result of an unequal division of scarce resources, notably food. As has been noted, however, there is no evidence that nutrition was a problem in Scotland in the 1940's when incidence rates among young females were particularly high. It will also be shown in the next section that employment could not have been the cause of high female incidences.

The consistently higher mortality from non-respiratory tuberculosis north of the border can also be partly explained by the high levels of overcrowding prevalent in Scotland. As both Peters and Stein point out there was a strong correlation between non-respiratory tuberculosis and levels of overcrowding. In urban areas, non-respiratory disease among children was not principally due to infection by the bovine bacillus, but rather to close contact with open cases suffering from respiratory tuberculosis. In a study of non-respiratory tuberculosis in Lanarkshire, Gow Brown claimed that,

the risk of infection in childhood was much greater in substandard homes than in satisfactory homes.¹¹²

As with respiratory tuberculosis, it is also clear that overcrowding became a relatively greater factor in accounting for non-respiratory incidences as the twentieth century progressed. Thus during World War Two the only form of non-respiratory tuberculosis mortality to increase was meningeal which is caused more by human than bovine infection.¹¹³ The importance of overcrowding as a factor in promoting the incidence of non-respiratory tuberculosis is reflected by the fact that whereas such mortality was twenty-four per cent higher in Scotland than in England in 1900, by 1931 it was forty-two per cent higher.

112 T. Gow Brown, 'The influence of social factors on the incidence of extrapulmonary tuberculosis infection.' Journal of Hygiene. (45) 1947. p.248. See also below 'Bovine Infection.'

113 P.L. McKinlay, 'The recent changes of tuberculosis mortality in Scotland.' Health Bulletin. Oct. 1948. No.4. pp.66-71.

b) The Scottish Experience

The space devoted to discussing the possible links between overcrowding and respiratory tuberculosis in this chapter is a reflection of the importance attached to the subject in Scotland in the first half of the twentieth century. Although the provision of institutional treatment diverted attention away from the subject in the immediate prewar years, by the 1930s poverty was once again a major issue in the anti-tuberculosis campaign.¹¹⁴ In Scotland most of the debate focussed on housing which is hardly surprising given the gross levels of overcrowding present in most Scottish towns and cities. Stein apart, most investigators conceded that it was impossible to ascertain the extent to which overcrowding was responsible for high incidences of the disease. Even in a city like Glasgow, where poverty and overcrowding were not necessarily contiguous, attempts to isolate the effects of housing on health were fraught with difficulties, the most intractable being those posed by the age-composition of households and the rehousing policies.

It can, however, be stated with some certainty that the precipitous decline of mortality in Glasgow between 1870 and 1920 owed little to improvements in housing conditions. Although there were some improvements, mortality decline in Glasgow was much faster than in

¹¹⁴ So much so that an Editorial in Tubercle deprecated the state of affairs at the 1937 Conference of the N.A.P.T. whereby the disease was being used as a 'stalking horse for improved social conditions.' Tubercle Nov. 1937. p.81.

comparable British cities which contained far fewer overcrowded houses. Therefore the contribution of improved housing must have been overwhelmed by that of other factors, increased natural resistance, higher nutritional intake and a lessening of cross-infections being the most likely candidates.

However, as the benefits conferred by such improvements slowed after 1920 so, too, did mortality decline. This was most notable in the major cities and in Glasgow in particular where mortality ceased to decline in the 1930s and then increased over the following decade. The depression and the war cannot, however, be held solely responsible for Glasgow's deteriorating position at this time because both Liverpool and Manchester demonstrated that mortality could continue to fall during hard times. The relationship between small housing and higher female incidences of the disease strongly suggests that overcrowding was primarily responsible for the relatively high mortality rates amongst young women after 1920. Overcrowding was thus the most likely factor in perpetuating Scotland's primitive female tuberculosis mortality curve. The large numbers of young children exposed to human infection in overcrowded houses also partly served to maintain Scotland's consistently higher death rate from non-respiratory tuberculosis.

In answer to criticism that overcrowding did not increase in line with tuberculosis incidences during the Second World War, it must be remembered that we are

dealing with an infectious disease. Thus in Glasgow incidences increased at the start of the war in line with other major cities, but high levels of overcrowding meant that the disease spread further amongst the population allowing mortality and morbidity rates to remain higher for much longer than elsewhere. Such an interpretation is borne out by evidence which shows that there was an increase amongst contact cases at the time which badly affected the young in particular, respiratory incidence rates rising by ninety-four per cent amongst children under fifteen in Glasgow between 1938 and 1943.¹¹⁵ It is thus argued, although it cannot be proven, that as the twentieth century progressed overcrowding assumed a greater importance as a determinant of higher tuberculosis incidences.¹¹⁶

115 S. Laidlaw, 'Increasing incidence of pulmonary tuberculosis in children in Glasgow.' The study revealed 'that the sickening rate is highest where overcrowding is worst, and in addition a study of the clinical condition of the individual patients showed that the disease tended to throw up the more severe types.' E.M.J. Feb. 1946. p.49. Stein, too, noted that the disease tended to be more severe the greater the level of overcrowding.

116 It is, perhaps, ironic for those who championed better housing as a means of reducing tuberculosis that the solution to Glasgow's housing problems was perceived to lie partly in the construction of high-rise flats.

6. EMPLOYMENT

a) General Discussion.

Most commentators attributed the faster decline in mortality amongst females after 1870 to the fact that men were still being subjected to greater exposure to infection at the workplace.¹¹⁷ It had long been recognised that certain trades carried a high risk of contracting tuberculosis, notably those where there was a high exposure to dust, particularly silica. Other trades with a mortality appreciably higher than the average included barwork, hairdressing and shoemaking. The reason for each trade being risky varied. Thus dusty trades lowered resistance and promoted expectoration, silica being by far the most harmful in this respect; barmen were likely to face greater exposure to infection as, too, were hairdressers, although in the former case a higher propensity towards alcohol abuse might also have been important; while shoemakers tended to have a higher than average mortality because it was thought that it was a trade which attracted less able-bodied recruits.¹¹⁸ For industry and commerce as a whole, however, Stewart has demonstrated that greater risk of infection was found where workplaces were small and/or overcrowded. Outwith

117 They were also more exposed in other places to which females were generally denied access, notably public houses.

118 For a detailed account of the history of the relationship between occupation and tuberculosis incidence see A Stewart, 'Tuberculosis in Industry.' in Heaf (ed), Symposium op cit. pp.645-684. Also, I.N. Sutherland, 'Variations in occupational mortality between and within the social classes.' British Journal of Social Medicine. 1947. pp.126-140.

dusty trades and a few other exceptions, therefore, the degree of exposure was far more important than the type of work performed.

Although certain trades and working conditions were associated with higher than average mortality, it is far more likely that occupation affected general tuberculosis incidence through wage levels. While data from England in 1931 showed a decided association between mortality from tuberculosis in males aged between twenty and sixty and social status as defined by occupation, there existed a more pronounced association between the same criterion and incidences amongst their wives.¹¹⁹ Such findings suggest that it was the economic status conferred by occupation which was important rather than the occupation per se.

b) The Scottish Case.

The pattern of tuberculosis mortality in Scotland cannot be adequately explained by reference to type of occupation. In certain localities such as Dundee, mortality would have been affected by the employment of young women in the jute mills, although it must be noted that respiratory mortality rates were not particularly high in Paisley where the textile industry was still a major employer of young women in the twentieth century.¹²⁰ Conversely, the demise of the cotton industry in the rest of the West of Scotland after the 1860's may

119 Report of the Scottish Health Services Council's Committee on Tuberculosis 1951 op cit. p.38.

120 In 1929-31 the Paisley mortality rates were lower than the Scottish average.

have helped accelerate mortality decline because at that time mortality levels in the industry were double the national average.¹²¹ Nevertheless, it seems clear that the factor which helped equalise Scottish and English mortality levels at the turn of the century was not so much the type of employment undertaken, but rather the fact that wage rates were increasing faster north of the border, particularly in Central Scotland.

Employment has also been used as an explanation for the rapid increase in the incidence of the disease in Glasgow during the Second World War, as it had been in English cities during the First War. In 1941, an Inquiry set up to investigate the increase blamed extended hours of work and fatigue.¹²² It was found that the rise in incidence was almost completely confined to labourers, tradesmen and unskilled factory workers. At the time sixty-seven per cent of workers in heavy industry and forty per cent of workers in medium industry were working hours in excess of standard. There was little increase amongst the professional and commercial classes whose hours of work had not increased.¹²³ It was also established that forty per cent of housewives notified during 1940 were working part-time.

121 Smith, Retreat op cit. p.213. The statistics Smith refers to make no allowance for the wage rates prevailing in the cotton industry. It may have been the case that mortality was higher among cotton operatives because wages were relatively low. However, exposure to cotton fibres could have promoted coughing and expectoration and, hence, increased the opportunities for infection.

122 Laidlaw and MacFarlane, B.M.J. Sept. 1941. op cit. p.432.

123 The Report did not draw attention to the obvious fact that such classes also occupied larger houses.

Leaving aside the fact that mortality in Glasgow actually declined during the First War when similar employment conditions prevailed, this explanation can also be criticised on the grounds that there is no evidence to suggest that the young women of Glasgow worked longer or harder than their sisters in Liverpool, Manchester or London where there was not such a worrying increase in incidence among young women. Moreover, although incidence rates were fifty per cent higher than prewar levels for females aged between fifteen and twenty-five, they were also forty-one per cent higher for those aged between ten and fifteen.¹²⁴ This age-group would not have been as directly affected by working in industry.

Glasgow's wartime and postwar experience of high respiratory tuberculosis incidence amongst young women cannot be attributed to employment. As can be seen from Fig. 4.(xviii), the city generally had less women in employment than English cities, while it had a much lower percentage of females working in 1951.

Fig. 4.(xviii) Females Working as a Percentage of all Females Over Working Age.¹²⁵

	<u>Glasgow</u>	<u>London</u>	<u>Manch.</u>	<u>Liverpool</u>	<u>Birm.</u>
1921	36.5%	40.1%	41.1%	25.8%	39.9%
1931	31.8	38.7	37.0	28.7	35.0
1951	38.9	62.7	55.3	44.4	48.8

Had occupation been an important determinant of incidence rates, then some other factor, such as overcrowding, must

¹²⁴ Health Bulletin Dept. Health for Scotland. July 1944. p.34.

¹²⁵ Census.

have exercised an even greater pull in the opposite direction.

(7) STRESS, STRAIN AND SOCIAL HABITS

(a) General Discussion

While clearly related to poverty, living conditions and employment, stress, strain and social habits were often invoked as a collective deus ex machina for explaining tuberculosis incidences. Sontag has argued that the less medical science knows about the mechanism of a disease, then the greater is the tendency to explain the victim's predicament in moral or psychological terms.¹²⁶ Tuberculosis had always provided an ideal playground for moralists and psychologists, particularly as so many of its victims seemed to be gifted young artists. The supposed links between tuberculosis and genius have been chronicled at great lengths elsewhere, indeed at one time the history of the treatment of the disease seemed to consist of a hunt for great men and women who may have succumbed to the bacillus, and little needs to be added here except to endorse Smith's conclusion that a disease which killed so many was bound to have claimed its share of artists.¹²⁷

126 S. Sontag, Illness as Metaphor. (New York 1977).

127 See, for example, Dubos, The White Plague op cit. pp. 44-66. Smith, Retreat op cit. pp. 224-228. As the following case-history reveals, one sanatorium superintendent believed he may actually have been doing a disservice to English literature by curing his charges. 'D.C. had disease of both lungs. While in bed and under sanocrysin he started writing to the papers and getting stories accepted. Envisaged a time when he could retire to a country cottage and make his living by writing. As his condition improved, rejection slips became more

While Sontag undoubtedly has a point when she argues that the victims of tuberculosis were perceived as somehow deserving of their fate, she appears to write as if the aetiology of the disease had been completely explained by Koch's discovery of the bacillus.¹²⁸ It is, however, still far from certain why a minority of people contract clinical disease while the majority escape, even given similar opportunity for infection and similar familial and socio-economic backgrounds. As much of the debate on causality centred around the question of why mortality was still so high amongst young women, explanations tended to be couched in moralistic or psychosomatic terms.

Given that the majority of the medical profession were male and middle-aged, a good deal of moral censure accompanied explanations for high incidences of the disease. As Bryder points out, the 'excitement' and pace of modern living was perceived as being somehow particularly injurious to the health of young women.¹²⁹ Such opinions were not the sole province of sanatorium superintendents divorced from the reality of working class experience, but were also shared by some M.O.H.s. Thus the high incidences of the disease amongst young

frequent and finally monotonously regular. Took to chicken farming.' C.G. Leayroyd, 'The Psychology of the tuberculous.' B.J.T.B. 1936. p.112. The high quality of the work of some artists who died of the disease may have owed more to Johnson's dictum that it concentrates the mind wonderfully when one knows one is to be hanged in a fortnight than to any mysterious 'liberating' toxins released by the bacillus.

128 Sontag, Illness as Metaphor op cit. p.54.

129 Bryder, Mountain op cit. pp.120-125.

women in Glasgow during the Second World War was attributed to 'a combination of long hours, overtime, strain and ill-spent leisure.' The same inquiry noted with regret that people continued to go dancing as often as they had before the war.¹³⁰ In a similar vein, McMillan, having found no correlation between overcrowding and incidences of tuberculosis in Glasgow, concluded that,

from the social aspect we must look beyond housing to other problems of adolescent and young adult life, such as conditions of employment and the use of leisure.¹³¹

The obvious problem with such explanations is that they cannot account for the wide geographical disparities in incidence rates. It seems rather unlikely that the young women of Glasgow were gaily dancing themselves into sanatoria while English girls wisely sat at home.

Others blamed the increase on young women's new found propensity for dieting.

I believe, and the view is widely held, that slimming has had a definite effect on the incidence of tuberculosis in young adults.¹³²

Thus those who argue for the prime importance of diet in determining tuberculosis incidence seem neither to want their cake nor eat it. Where once young people did not have enough to eat, they now had, but didn't want it!

¹³⁰ Laidlaw and MacFarlane, op cit. B.M.J. Sept. 1941. p.436.

¹³¹ J.S. McMillan, A Study of Respiratory Tuberculosis in Glasgow With Particular Reference to Certain Environmental Factors. Glasgow University M.D. Thesis. 1955. p.181.

¹³² R.Y. Keers, 'Diet and tuberculosis.' Proceedings of the Nutritional Society (3) 1945. p.194.

Again, such trite explanations cannot account for geographical disparities.

Critics of personal habits were on much firmer ground when warning against drinking alcohol in excessive quantities and later, in the 1950's, against smoking. However, although both habits have been shown to predispose towards contracting clinical disease, neither were exclusive to the West of Scotland, nor to the working-class.

The debate over the association between mind and body with respect to tuberculosis was resurrected by Eric Wittkower's publication of A Psychiatrist Looks at Tuberculosis in 1949. Having interviewed some 785 tuberculous patients, Wittkower identified 'an inordinate need of affection' as being the dominant personality trait of the tuberculous. In the absence of controls, however, it could not be shown that such a need was not a response to contracting an infectious, stigmatic disease rather than being a predisposing cause. Kissen extended Wittkower's work and, through his access to a Lanarkshire Chest Clinic, was able to establish control groups of non-tuberculous cases. In a case study of 198 persons, sixty-four of whom were tuberculous, he claimed to have established that 'emotional factors precede the onset of tuberculosis in a significantly higher proportion as compared to controls.' The proportions were seventy and

twenty-five per cent respectively.¹³³ He went on to claim that,

the emotional factor characteristically preceding the onset in cases of tuberculosis as compared with controls is a break in a love link,

the most common of which was a romance, engagement or marriage.¹³⁴ Love, he stressed, was to be understood in its spiritual rather than sexual sense. He repeated his study on patients who had relapsed during treatment and reported that sixty-one per cent of them had also experienced a break in a love link.¹³⁵

Although the numbers involved were relatively small, Kissen believed that his findings proved that clinical respiratory tuberculosis has a strong psychosomatic element. The long-term, phasic nature of the disease is, he claims, indicative of the importance of psychological well being, relapses being modulated by the patient's mental state. The importance of emotional factors were cited as reasons for high incidences of the disease amongst migrants, lunatics and during wartime. There are, however, sound social, economic and medical reasons why incidences should be high amongst migrants and lunatics,

133 D.A. Kissen, Emotional Factors in Pulmonary Tuberculosis. (1958). p.213.

134 There is some other evidence to support this thesis. In Denmark it was found that tuberculosis was four times more prevalent amongst divorced men and twice as prevalent amongst widowers than it was amongst the general population. Crofton and Douglas, Respiratory Diseases op cit. p. 234. Such evidence, however, is far from conclusive. The men may have been divorced because they were tuberculous rather than being tuberculous because they were divorced.

135 D. Kissen, 'Relapse in pulmonary tuberculosis due to specific psychological causes.' Health Bulletin. Jan. 1957. pp.12-14.

while it is not clear how emotional factors could have played a more significant role in, for example, Glasgow during the Second War than they did during the First.

It has also been argued, with particular reference to wartime experiences, that stress in general is a factor of major importance in explaining tuberculosis incidences. Again, however, such explanations fail to account for Glasgow's high incidences of the disease during the Second War because the city escaped the blitz relatively lightly in comparison to the English cities.

Stress and strain are too nebulous to be of much use in explaining tuberculosis epidemiology. Moreover, the major causes of stress must have been poverty, unemployment and overcrowding all of which were themselves strongly associated with high incidences of tuberculosis. Hardy has even suggested that tuberculosis began to decline because people in general were becoming more optimistic of the future in the last half of the nineteenth century.¹³⁶ Be this as it may, it has still to be shown why some people were more optimistic than others.

b) The Scottish Case

Personal habits and psychology may or may not explain why some people succumbed to clinical tuberculosis while the majority escaped unscathed. Such theories often tell us more about the people who express them than about those for whom they were expressed. They tend to break down, moreover, when confronted with the

¹³⁶ Hardy, 'Diagnosis, death and diet.' op cit. p.400.

widely varying geographical trends exhibited in tuberculosis epidemiology. As such they can be dismissed as possible determinants of the different Scottish and English tuberculosis mortality experiences.

(8) BOVINE INFECTION

a) General Discussion

The higher mortality rates for non-respiratory tuberculosis in Scotland was partly caused by a higher incidence of bovine tuberculosis north of the border. It was difficult to determine exactly how much clinical tuberculosis was caused by each type of bacillus, but by the 1920's it was becoming clear that bovine infection was more prevalent than was once believed, particularly in rural areas. The most authoritative sources are those of Griffith for England and Blacklock for Scotland. Fig. 4.(xix) shows the percentage of various types of tuberculosis attributable to bovine bacillus in England and Scotland in the 1930's and 1940's. As can be seen, barring cervical tuberculosis amongst the under fives, bovine tuberculosis caused more disease in Scotland than in England.

Fig. 4.(xix). Percentage of Cases Infected With Bovine Type of Bacillus by Age.¹³⁷

	<u>Under 5</u>		<u>5-15</u>		<u>All Ages</u>	
	<u>Eng.</u>	<u>Scot.</u>	<u>Eng.</u>	<u>Scot.</u>	<u>Eng.</u>	<u>Scot.</u>
Cervical	91%	65%	53%	62%	50%	52%
Skin	58	100	44	71	49	69
Bone and Joint	29	46	19	29	19	30
Genito Urinary	-	-	-	-	17	31
Meningeal	28	34	24	14	25	30
Respiratory	-	-	-	-	2.6	5.7

Almost without exception autopsies revealed that bovine infections were of alimentary origin. This, coupled with the fact that the highest incidences of bovine infection were to be found amongst young children, clearly points to contaminated milk as being the prime source of bovine disease. Although non-respiratory tuberculosis mortality was higher in urban than in rural areas, the factors accounting for the majority of cases were different. Bovine infection was much more prevalent in rural areas, high incidences in urban areas being related to the greater opportunity for infection provided by overcrowded homes. Thus although the estimated percentage of non-respiratory bovine tuberculosis cases in Scotland was twenty-eight per cent, in Glasgow it was only 8.9 per cent, while in county districts it was 44.4 per cent.¹³⁸ Thus the extensive use of heat treatment of milk which had commenced in Glasgow in the mid 1930's caused the morbidity rate from bovine tuberculosis to be

¹³⁷ A.S. Griffith, 'Bovine tuberculosis in man.' Tubercle (18) Aug. 1937. pp. 529-543. J.S. Blacklock, 'Tuberculosis in infancy and childhood.' G.M.J. (118) 1932. pp.241-253. Report of Scottish Health Service Council's Committee on Tuberculosis 1951 op cit. p.36.
¹³⁸ ibid. p.37.

a fifth of that prevailing in the districts from which the city derived its milk supply. Similarly the percentage of respiratory tuberculosis of bovine origin was twice as high in the county districts of Aberdeen than it was in the city, where eighty per cent of all milk was heat treated or pasteurised.¹³⁹ Pasteurisation was thus clearly effective in reducing mortality and the high levels of crippling morbidity caused by the bovine bacillus in milk. Pasteurisation, however, was a long time coming. Not until 1949 was pasteurisation made compulsory in Great Britain.

Although Koch had dismissed the role of the bovine bacillus as being unlikely to be pathogenic to man in London in 1901, a Royal Commission quickly established that bovine infection could be transmitted to humans through milk and called for protective legislation.¹⁴⁰ However, despite the fact that the Final Report of the Astor Committee called for the eradication of tuberculous cattle in Britain in 1913, by 1935 there was still no official scheme implemented to achieve this end. The Milk and Dairies (Scotland) Act together with a series of Tuberculosis Orders attempted to tackle the problem but were confined to allowing inspection of

139 G.H. Chalmers, 'Tuberculosis and pasteurisation of the milk supply.' Proceedings of the Nutritional Society. 1945. p.187.

140 Interim Report of the Royal Commission on Human and animal Tuberculosis. [Cd 2094]. 1904. Final Report of the Interdepartmental Committee on Tuberculosis. [Cd 6641]. 1913. It has been claimed that Koch's erroneous pronouncement was influenced by the fact that, as a government servant, he was too mindful of appeasing the powerful Prussian agricultural lobby. S. Vere Pearson, Men, Medicine and Myself. op cit. p.14.

dairies and cattle.¹⁴¹ A powerful agricultural lobby facing little opposition from an equivalent distribution or consumer interest group, coupled with the relatively small scale nature of much British dairy farming ensured that there would be no large-scale culling of tuberculous cattle in Great Britain as there had been in the United States and Denmark.¹⁴²

In 1923 a Milk (Special Designation) Order was passed which defined four grades of milk: Certified (tuberculin tested and bottled on the farm); Grade A (tuberculin tested); Grade A; and, Pasteurised.¹⁴³ The idea was that the public should be educated to buy tuberculin tested milk, which implied that they should be able to buy potentially tuberculous milk if they so desired. Although Clayson claims that the graded milk scheme was 'a significant step forward', its limitations were revealed by statistics which showed that in Edinburgh only 820 of the 24,000 gallons of milk consumed daily was Grade A (tuberculin tested), while in Glasgow only 1,102 out of a daily consumption of 65,000 gallons was so graded.¹⁴⁴ In May 1932 Glasgow Corporation

141 The penalties for keeping tuberculous cattle were not particularly severe. Thus the first farmer in Scotland to be prosecuted under the Tuberculosis Order of 1913 for the possession of a cow with tuberculosis of the udder was fined £2, but received £1 10/- in compensation once the cow was slaughtered. Glasgow Herald 10th June 1914.

142 For an excellent account of the rearguard action fought by the dairy interest, see Smith, Retreat op cit. pp.178-194.

143 It was important to know that milk was bottled on the farm because otherwise tested milk could be bulked with tuberculous milk and so become contaminated.

144 Clayson 'Tuberculosis' in Common Weal op cit p. 405. Public Health Jan. 1934. p.118.

resolved not to allow any milk to be sold in the city which was neither Grade A (Tuberculin Tested) or pasteurised. All pasteurisation processes had to be approved by the Corporation.¹⁴⁵ Despite these measures, five per cent of the city's milk was still not free of tubercle in 1948.¹⁴⁶

The move towards universal pasteurisation was resisted by many eminent tuberculosis specialists. Some objected on the grounds that heat treatment would destroy the milk's vitamins and impair its nutritional content. Others, such as Philip, believed it would encourage sloppy hygienic practices on dairy farms and called instead for more attested herds. Philip, himself, had established a supposedly tuberculosis free dairy herd with the aid of the Royal Victoria Hospital Trust at Gracemount Farm in Edinburgh.¹⁴⁷ Others believed that, as an initial infection from the bovine bacillus might confer greater subsequent immunity to human infection, pasteurisation would deprive children of the opportunity of receiving an immunising dose of tuberculosis.¹⁴⁸ They

145 The Administration of Tuberculosis in Glasgow - 1933. op cit. p.18.

146 MOH Report Glasgow. 1948. p.93.

147 In 1935 a Tuberculosis (Attested Herds) Scheme was introduced into Scotland under which farmers were offered tuberculin testing free of charge provided they adhered to strict guidelines designed to prevent infected cattle from joining the herd. The milk could then be sold for a penny a gallon more. The Scheme spread rapidly in Ayrshire which accounted for the majority of the 769 attested herds in Scotland in 1937. By 1944 there were 2,843 such herds in Scotland but they still only provided a small percentage of the total milk consumed. Chalmers, 'Tuberculosis and pasteurisation.' op cit. p.187.

148 F.F. Cartwright, A Social History of Medicine. (1977) p.120.

argued that tuberculosis was less prevalent in rural areas because children there were more likely to have drunk tuberculous milk. However, although overall tuberculosis mortality was lower in rural areas, mortality from bovine infection was higher. Immunising children with unquantifiable amounts of bovine bacilli was clearly fraught with danger.

Between 1934 and 1944 milk consumption in Scotland increased by fifty-two per cent. The bovine bacillus was not however responsible for the increase in tuberculosis during the war years. Thus in Glasgow between 1940 and 1950 mortality from non-respiratory tuberculosis fell by forty-five per cent. At the same time mortality from respiratory disease increased by twenty-eight per cent. Although pasteurisation undoubtedly benefited urban children, particularly when milk consumption levels increased, there is evidence that infection from the bovine bacillus was on the wane before the 1930's. Thus in Glasgow mortality from abdominal tuberculosis fell by ninety per cent between 1905 and 1935 whereas that for other non-respiratory forms dropped by only sixty-five per cent.¹⁴⁹ The Corporation's efforts to stamp out bovine infection must have had some effect, but it seems more likely that the decline owed more to the small quantities of milk consumed coupled with the move towards mothers feeding their young offspring on powdered milk

¹⁴⁹ The bovine bacillus was responsible for some eighty per cent of abdominal cases in Glasgow. Blacklock, 'Tuberculosis in infancy and childhood.' op cit.

which was encouraged at Mother and Child Welfare Clinics.¹⁵⁰

It has also been shown that the bovine bacillus was responsible for a significant amount of respiratory tuberculosis in rural Scotland. It was suspected that in these cases infection was direct from cattle to man. The higher rate of bovine respiratory tuberculosis north of the border, 5.7 per cent of all cases in Scotland as against 2.6 per cent in England, was brought about by the higher rates in rural areas. Work by Munro in Fife in the 1930's demonstrated that bovine respiratory disease was far more widespread than was once thought. Subsequently rates as high as twelve per cent in Banffshire and twenty-six per cent in Orkney were discovered.¹⁵¹

b) The Scottish Case

Infection by the bovine bacillus was a more serious problem in Scotland than it was in England and Wales and was undoubtedly responsible to a considerable extent for the higher levels of non-respiratory mortality prevailing north of the border. It has never been satisfactorily explained why this should have been so, but it has been shown that the bovine bacillus's share of tuberculosis mortality increased as one went further north. Thus levels in northern England were greater than in southern England and levels in northern Scotland were greater than in southern Scotland. Different farming practices may have been important. Cows became more tuberculous as they

¹⁵⁰ Smith, Retreat op cit. p.191.

¹⁵¹ J. Francis, 'Tuberculosis of Animals.' in Heaf (ed), Symposium op cit. p.299.

aged so small poorer farms would probably have contained more older cattle. Geographical disparities in bovine incidence may also have been caused by climate.

Higher rates of bovine respiratory tuberculosis in rural Scotland may also have accounted for the slower rate of decline of respiratory tuberculosis than in rural England.

(9) CONCLUSION

Having reviewed the most important determinants of tuberculosis mortality and having related them to the salient features of the Scottish mortality curve it is clear that no single factor can adequately account for mortality experience over the entire period 1870-1960. Between 1880 and 1920, the most notable feature was that respiratory mortality rates in Scotland were falling into line with the lower rates prevailing in England, so much so that by the end of the First World War mortality was actually less in Scotland as, indeed, one would have expected in a less urbanised country. This decline was fastest in the West of Scotland where mortality had furthest to fall. Because mortality fell faster in Glasgow than in much less overcrowded cities elsewhere, housing may be dismissed as the key factor in accounting for mortality rates at this time. Three other factors may have been crucial; increasing natural resistance, improved public health and higher real wages leading to augmented diets. The first was undoubtedly important but its effects would not have been confined to Scotland.

Better sanitation leading to a reduction in general illnesses may, as Szreter argues, have lowered tuberculosis mortality but his theory is difficult to prove one way or another. In the absence of any proof that Glasgow was more environmentally healthy than comparable English cities, and the appalling levels of overcrowding present would suggest that it was not, the role of public health in reducing tuberculosis mortality in the city at this time must remain, at best, conjectural. Although it has not been satisfactorily shown that rising real incomes in the West of Scotland were automatically reflected in rising levels of food intake, it would seem likely that this was indeed the most important factor in accounting for the more precipitous decline of respiratory tuberculosis mortality at this time. Such an explanation would also account for the fact that mortality continued to decline in Glasgow during the First World War when it was increasing elsewhere in Britain.

When the relatively greater increases in real wages ceased in Scotland after 1920 other factors assumed greater importance in accounting for respiratory tuberculosis incidences. Although the poverty 'complex' did not allow exact weights to be attributed to individual causal factors, enough evidence has been cited to link Glasgow's deteriorating record with respect to the disease to the high levels of overcrowding prevalent in the city. Thus as the benefits of higher real wages and increased natural resistance became more widespread,

so housing assumed greater importance as a causal factor. This is reflected in the much higher share of Scottish mortality attributable to Glasgow in the interwar years. When mortality increased at the start of the Second World War overcrowding in Glasgow ensured that the disease would spread further than elsewhere and would be more difficult to bring under control.

The slower rate of respiratory mortality decline in rural Scotland can be partly blamed on the lower levels of natural resistance prevailing amongst the more isolated communities in the Highlands and Islands and partly to the fact that bovine respiratory infection was greater in rural Scotland. The poor quality of housing in many rural areas must also have played a part in slowing mortality decline.

The higher total tuberculosis mortality levels in Scotland can be attributed to the fact that for the entire period 1870-1960, non-respiratory mortality was consistently higher north of the border. In rural areas this was again due to the greater amount of bovine infection present whereas in urban areas it was caused by overcrowding subjecting a greater number of young children to contact infection.

Although neither theory accounts for all the factors which determined tuberculosis mortality, it has been argued here that McKeown's nutritional explanations are more relevant to the period 1880-1920, while public health explanations are more relevant to the period thereafter. It is argued that the paucity of such

measures in reducing levels of overcrowding in Scotland was responsible for the relatively high levels of tuberculosis mortality prevailing in Scotland in the period 1930-60. As a corollary, improvements in housing conditions elsewhere helped keep the disease on the retreat.

CHAPTER FIVE

CRISIS AND CURE 1940-60

1. INTRODUCTION

The belligerent nations of the 1939-45 war all suffered an initial increase in tuberculosis mortality. By the end of the war, however, most nations experienced a return to a downward trend in mortality, including such countries as Belgium, Holland, France and Norway which had endured rapacious occupation. This was not the case in Scotland which, along with Portugal, shared 'the melancholy distinction of being one of the two countries to have an increase in tuberculosis mortality in the period 1947-9 over the rates for 1937-9.'¹

In its editorial of July 1950, 'Crisis in Tuberculosis', the British Medical Journal drew attention to the findings of a special sub-committee of tuberculosis consultants and specialists in Scotland, the 'Hamilton Committee', which reported, inter alia, that,

the present situation in the management and control of tuberculosis in Scotland is so serious as to be critical, and can be met only by a 'crisis expansion' of the tuberculosis service.²

The Committee identified a shortfall of some 1,350 tuberculosis beds in Scotland and pointed to a shortage of nurses as the greatest single obstacle to be overcome.

¹ J.B. MacDougall, Chief of the Tuberculosis Section of the World Health Organisation, quoted in Respiratory Tuberculosis in Scotland. Association of Scientific Workers op cit p.5.

² B.M.J., 8 July 1950. p.832.

Local Authorities were also called upon to adopt 'bold and imaginative' policies for rehousing tuberculosis families.

Within eight years of the publication of the Hamilton Committee's Report the Department of Health for Scotland was in a position to state that the,

machinery of the tuberculosis services is now to some extent being directed towards the diagnosis and treatment of diseases other than tuberculosis.³

In Scotland mortality rates had fallen from 470 per million of population in 1950 to 90 by 1960. During the same decade mortality in England and Wales fell from 321 to 68. Even in Glasgow mortality declined from 953 to 297 over the same period. It will be argued in this chapter that this remarkable transformation owed little to any 'crisis expansion' of the tuberculosis services, let alone to any 'bold and imaginative' rehousing policies, but was effected rather by the introduction of effective chemotherapy, notably the combination of Streptomycin, P.A.S. and Isoniazid.

Before describing the revolution in treatment occasioned by Selman Waksman's discovery of Streptomycin, it is first necessary to examine several other important developments affecting the treatment and control of tuberculosis during this period. The war itself had a marked effect on change. Increased incidences of the disease, population changes and the introduction of the

³ Report of the Department of Health for Scotland and the Scottish Health Services Council 1958. [Cmnd 697], 1959, p.30.

Emergency Hospital Scheme and consequent bed shortages focused attention on preventing the one disease which, more than any other, affected the efficiency of the nation. The responses induced, notably the granting of long-called-for tuberculosis allowances and the introduction of mass miniature radiography and improved rehabilitation facilities will be examined.

The major problem of bed shortages was primarily caused by an inability to attract nurses to tuberculosis hospitals. This problem will be described and the solutions proposed and adopted assessed in a separate section.

The creation of the National Health Service also had important ramifications for the treatment of tuberculosis. Local Authorities were henceforth relieved of their responsibility for treatment and thus the curative and preventive branches of the tuberculosis service were separated. The imaginative and popular scheme whereby Scottish tuberculosis patients were flown to sanatoria in Switzerland will also be described as, too, will the campaigns for mass radiographic screenings of entire populations, notably the campaign conducted in Glasgow in 1957. The belated and controversial introduction of B.C.G. vaccination also occurred during this period in Scotland. Finally this chapter will look at the introduction of effective chemotherapy and try to assess its influence on declining mortality rates. Attention will be focussed, in particular, on Edinburgh where, under the direction of Sir John Crofton, a team of

specialists claimed a world first in being able to effect 100 per cent cure rates in the treatment of respiratory tuberculosis.

2. WORLD WAR TWO

a) The Emergency Hospital Scheme

The belief that 'The bomber will always get through' and the example of the Spanish Civil War prompted the Government to take steps to organise the country's chaotic, ageing and underfunded health services in the years immediately before the outbreak of war. The Secretary of State for Scotland was given the responsibility of organising an Emergency Hospital Service capable of coping with a large influx of civilian and military casualties. A scheme was drawn up whereby the country was divided into five regions each of which was to be capable of offering the full range of available health services. Existing hospital accommodation was expanded by an additional 16,754 beds; 7,000 of which were contained in seven new purpose-built hospitals, the remainder in annexes and converted hotels.⁴

Although the scheme provided more beds, its operation initially penalised tuberculosis patients because many of them were sent home on the outbreak of war to make room for expected casualties. Following

⁴ J. Kinnaird, 'The hospitals' in MacLachlan (ed.), Common Weal, op.cit., p.236. Three of the new hospitals provided under the Scheme; Stracathro, near Brechin; Bridge of Earn, Perth; and Law Junction, Lanarkshire, were to become major centres for the treatment of tuberculosis.

Titmuss, Bryder has suggested that this policy of discharging large numbers of infectious cases into the community was a significant factor in accounting for the marked increase in incidence of the disease after 1939.⁵ Such an argument may be pertinent to England and Wales, where the pre-war decline in tuberculosis incidence resumed in 1941 following the decision to readmit all discharged tuberculosis patients, but in Scotland incidence rates continued to rise until well after the war. This was despite the fact that by 1940 more tuberculosis beds were available than ever before. In Glasgow, for example, where the increase was most pronounced, the EHS brought about a reduction from 1608 to 1321 in the number of tuberculosis beds available in 1939. This reduction, however, was almost entirely accounted for by the transfer of 280 children from Mearns Kirk to St. Andrews Hospital, Millport.⁶ The number of beds available for treating tuberculosis had been restored to its pre-war level by April 1940. Within four years Glasgow Corporation was responsible for almost 2,000 occupied tuberculosis beds. At the same time there were 1,334 more tuberculosis beds in Scotland than there had been before the war.⁷ Incidence rates, however, were at an all time high. The disruption caused by the E.H.S.'s need to discharge some ambulant tuberculosis cases could not thus have been a factor of any great

⁵ Bryder, Mountain, op.cit., p.229.

⁶ M.O.H. Report Glasgow 1939, p.63.

⁷ As will be seen, not all these beds were staffed. The crisis in nursing, however, did not begin to seriously affect bed availability until 1944.

importance in accounting for the spread of the disease in Scotland during the war.

In the short term the reorganisation and expansion of the hospital system narrowed some of the disparities in available treatment between different areas. Regionalisation thus eased the historical handicap imposed by the multiplicity of small responsible local authorities operating in Scotland as outlined in Chapter Three. In the long term the reorganisation, centred on regional areas, helped prepare the ground for the emergence of a National Health Service free from municipal control.

b) Policy Innovations

Concern over the disproportionate increase in the incidence of respiratory tuberculosis amongst manual workers, identified by such studies as those conducted by Laidlaw and MacFarlane in Glasgow, prompted the government to ask the Medical Research Council to establish a Committee on Tuberculosis in Wartime to advise on preventive measures. The Committee was quick to recommend the immediate introduction of three interrelated measures; mass miniature radiography; tuberculosis allowances; and rehabilitation workshops. It was believed such measures would detect 'early' cases of respiratory tuberculosis and encourage them to undertake treatment.

As has been seen, the latter two reforms had long been advocated, particularly by the Committee's

Secretary, the Socialist, D'Arcy Hart, but it required the exceptional circumstances of war before it was deemed possible to implement them. It has been argued that these reforms were principally induced by the overriding concern for national efficiency.⁸ While this view has much to recommend it, in practice the reforms proved to be neither national nor efficient.

As in the First World War the most immediate concern was, understandably, the health of servicemen. Although measures were taken to exclude the registered tuberculous from the armed forces, little could be done to prevent incipient cases from enlisting, particularly those who did not realise they had the disease.

Fortunately, a method of screening large numbers of people for tuberculosis became available. Mass miniature radiography using 70 mm photofluorography had been developed in the 1930s and was first extensively used in Britain to screen naval recruits in 1940. All recruits were given a preliminary screening and if anything untoward was revealed they were sent to be x-rayed on full-sized sets. The naval experiment revealed the alarming fact that 3.2 per thousand new recruits had active respiratory tuberculosis.⁹ This experiment led the Committee on Tuberculosis in Wartime to recommend that mass miniature radiography be introduced into industry. However, although mass screening was now technically possible, there still remained the problem of persuading

⁸ Bryder, Mountain, op.cit., p.231.

⁹ Tubercle, 1942, p.112.

incipient cases to seek and undertake treatment when they did not feel ill. The solution was thought to lie in the introduction of Tuberculosis Allowances to be given to persons prepared to undertake treatment at an early stage. The third development, rehabilitation, was to be introduced as a further incentive offering ex-patients sheltered employment until they regained their former strength.

The first miniature radiography unit did not arrive in Glasgow until 1943 and was not ready for operation until June 1944. The first group of civilians to be screened were employees from the Public Health Department, followed by other Corporation employees, civil servants, school leavers, students and then clothing workers. Shipyard and engineering workers were not offered screening until 1946. Had national efficiency been such an overriding concern, one would have expected this vitally important group of workers to have been screened before the war was over.

In the first year of operation some 14,500 persons aged between sixteen and thirty-five were examined in Glasgow. For every one thousand people screened, seventy-nine were recalled for a full-size film. Twenty-seven were subsequently sent for clinical examination, eighteen of whom required hospital treatment, the remainder receiving dispensary treatment.¹⁰

Although a further two units were set up in Edinburgh and Lanarkshire, mass radiography was not

¹⁰ M.O.H. Report Glasgow 1944, p.47.

available nationally at this time. The units were successful in revealing the extent to which the disease was rife among the population, but they could not have been responsible for the large increase in morbidity statistics as the upward trend preceded their introduction. Moreover, although miniature radiography detected some 1,000 cases of unsuspected active tuberculosis in Glasgow between 1944 and 1948, over the same period total notifications numbered 13,748.¹¹

Miniature radiography was successful in limiting the spread of tuberculosis in the armed services, but its civilian application was still constrained at this time because there was no effective cure for the disease, even at the incipient stage. Mass miniature radiography did not, therefore, seriously influence morbidity and mortality statistics until the introduction of the great national campaigns of the 1950s which were launched to eradicate the disease. By then an effective cure was available.

Tuberculosis Allowances were introduced in 1943 when the government belatedly recognised

that the financial assistance available to persons suffering from tuberculosis for the maintenance of themselves and their dependants has not in all cases been adequate or appropriate.¹²

¹¹ S. Laidlaw, 'Modern methods of Prevention and Treatment of Tuberculosis', M.O.H. Report Glasgow 1948, p.105.

¹² Department of Health for Scotland Memorandum No.36, 1943, p.4.

The allowance was made available primarily to attract 'early' cases because it was believed that since the recovery rate amongst this group was much higher, they could thus return to work more quickly and, if progression could be prevented or progressive cases isolated, the pool of infectious 'advanced' cases in the community would be reduced. Chronic and non-respiratory cases were, as a result, not eligible to claim the allowance. It was only to be paid, moreover, to those who would agree to follow the medical and social strictures of the Tuberculosis Officers. It was thus for the Tuberculosis Officer to decide who was and who was not eligible.

There were three main types of payments; maintenance allowances based on a standard scale, discretionary allowances which were means tested, and special payments to cover, amongst other things, travelling expenses. The maintenance allowance was set at 39/- for a married couple, 27/- for a single person, and a sliding scale for dependants according to age. According to Bryder, the amount of the allowance was determined by the fact that it could not be set too low, as it was ostensibly intended as an inducement to stop work, but, at the same time, could not be set so high as to set a dangerous 'minimum standards' precedent.¹³ Whatever the case, although in theory the allowances appeared adequate for their purpose, in practice they were far from generous.

¹³ Bryder, Mountain, op.cit., p.233.

Allowances were first introduced in Glasgow in September 1943 and were disbursed by the Public Health Department, the money being reimbursed from the Department of Health for Scotland. The allowance was paid fortnightly in advance and sent by post. Between September 1943 and May 1945, some 1,500 people had received the allowance. Four hundred of these people subsequently returned to work, indicating that the scheme may have been quite successful. Ninety-one recipients, however, died and a further 155 ceased to undertake the prescribed treatment and so had their allowance stopped. The 827 people still receiving money were getting some £838 a week between them. Few, therefore, could have been receiving the full standard allowance.¹⁴

It is almost impossible to evaluate the effectiveness of the scheme in attaining its putative goal of attracting tractable cases, particularly when it is remembered that many 'incipient' cases did not in fact have respiratory tuberculosis. Waiting lists for hospital beds certainly shot up at the time allowances were introduced in 1944, but notification rates were increasing in line and an acute shortage of beds was beginning to develop due to staffing difficulties (See Fig. 5(i)).

¹⁴ M.O.H. Report Glasgow 1944, p.45.

Fig. 5(i)
Waiting Lists for Tuberculosis Beds
in Glasgow Corporation Institutions¹⁵

	<u>T.B. Hospitals</u>	<u>Sanatoria</u>
1925	101	27
1930	89	27
1935	31	20
1939	35	11
1940	145	24
1942	311	28
1944	835	24
1946	1162	49
1948	1189	19

The waiting list for beds in sanatoria did not rise following the introduction of allowances indicating, perhaps, that there were still few 'early' cases on the Register. As has been seen, moreover, the complaint from Robroyston Hospital in 1944 was that there was still a paucity of tractable 'early' cases.

The main weakness of the allowance scheme was that the chronically ill, those persons most infectious and thus most dangerous to the community, were excluded. The scheme was predicated, as were most policies on tuberculosis, on the mistaken assumption that 'early' cases could be cured by the treatment then available. It was argued that if 'early' cases could be found and treated further infection could be prevented, but such reasoning was specious when the most infectious cases were given no incentive to seek treatment. The decision to exclude the chronically ill and the non-respiratory cases was parsimonious and cruel, the Tuberculosis Officer being left in the invidious position of granting

¹⁵ Glasgow Corporation Health Committee Minutes, 1925-1948, S.R.A. C1/3/-.

either an allowance or a death-sentence. For the respiratory case, being given an allowance meant there was hope of recovery, being denied meant there was none. Allowances were, however, extended to chronic and non-respiratory cases in 1946 when the original allowance was scrapped and replaced by payments through the National Assistance Board.

The Wartime Committee's third recommendation that greater encouragement should be given to ex-patients to find suitable employment had been pre-empted by the Tomlinson Report of 1943. Twenty years after the Treasury had buried the proposals of the Interdepartmental Committee on Rehabilitation of the Tuberculous, Tomlinson recommended that all disabled persons undertaking training should be paid an allowance. It was further recommended that sheltered workshops be provided for those in need of rehabilitation and, more controversially, that employers be encouraged to recruit a fixed quota of disabled workers. Under the scheme men undertaking training were to be paid 42/- per week and women 33/-.

Rehabilitation was very much a war-time measure conceived to overcome the nation's shortage of manpower. It was part of the process whereby those members of the workforce who had been marginalised by the high-rates of inter-war unemployment were to be encouraged once again to participate.

The winning of the war demands the full use of all available labour and disabled men and women can make a valuable contribution to this end, in some cases by entering the munitions industries, in others by taking up jobs in which they can set others free for war work.¹⁶

Disabled workers were to be retrained in special, sheltered factory units under a subsidised scheme which came to be known as Remploy. Although Glasgow did erect several Remploy units, no special provision was made for rehabilitating the tuberculous until a unit was opened in Springburn in 1949.¹⁷ Rehabilitation was handicapped by the fact that it was the responsibility of three separate authorities; the Ministry of Labour, the local authorities and, from 1946, the National Assistance Board. As with radiography, rehabilitation was mostly confined to the large urban local authorities. In the rural areas the scheme never got off the ground.

A far more imaginative rehabilitation scheme was the Clyde Basin experiment, set up by the Secretary of State for Scotland, Tom Johnston, in 1942. Under this scheme, industrial workers showing signs of debilitation were sent to hospital for a period of observation and convalescence. Although not specifically targeted at tuberculosis, the scheme's initial concentration on 15-25 year olds must have given many young adults an opportunity to regain their resistance to the disease. By 1945 some 22,000 patients had been treated under what was

¹⁶ Interim Report, Tomlinson Committee, October 1941.

¹⁷ The building had been delayed by the official ban on all building programmes which were not placed in the first category. Just as in 1918, peace was to see the tuberculous re-marginalised in society.

officially known as the Supplementary Medical Services Scheme.¹⁸

The war-induced social policy changes cannot, as Bryder rightly points out, be ranked with the great social reforms associated with Beveridge. They were ad hoc measures, motivated, perhaps, by a desire for greater efficiency, which, in the case of Glasgow at least, did not achieve their purpose and offered little comfort to the victims of tuberculosis.

c) Bed Shortages

Although the beds lost to the EHS were made good within a short-time and were, indeed, augmented, by 1943 the tuberculosis services were facing a severe crisis. As incidence rates rose unchecked, demand for beds reached unprecedented levels. At the same time, however, beds were having to be left empty because there were too few staff available for nursing. As can be seen from Fig. 5(i), the waiting list for Glasgow Corporation Tuberculosis hospitals increased eightfold between 1940 and 1946. Nationally the situation was little better, particularly as patients from the West of Scotland began to be sent to institutions in other parts of the country. Between 1945 and 1948 the number of patients awaiting treatment in Scotland rose by fifty-one per cent while the number of beds available for treating the disease

¹⁸ G McLachlan, 'The development of public medical care: 1900-1948.' in McLachlan (ed), Common Weal, op.cit., p.86.

increased by only five per cent.¹⁹ Having examined the reasons for the increase in demand for hospital beds, it is now necessary to examine why supply could not keep pace.

3. CRISIS IN NURSING

While the War certainly exacerbated the situation, the crisis in nursing had been fomenting for years. Throughout the 1930s the nursing profession in general was finding it increasingly difficult to attract suitable recruits. In a sample of twenty Scottish hospitals, the aggregate number of applicants for the quinquennium 1933-7 was as follows:²⁰

<u>1933</u>	<u>1934</u>	<u>1935</u>	<u>1936</u>	<u>1937</u>
4242	3762	3005	2812	2349

Within this general decline, the local authority hospitals fared much worse than the voluntary hospitals. Thus the municipal hospitals were forced to offer wages of £30-36 per annum to attract probationary nurses, while the voluntary hospitals paid between £18-22. The lower pay offered by the latter was to some extent offset by the enhanced status conferred by working in the voluntary sector. Sanatoria and mental hospitals faced further difficulties in recruitment due to the nature of the work, the poor status of the job, the physical isolation

¹⁹ Clayson 'Tuberculosis', in McLachlan (ed), Common Weal, op.cit., p.396.

²⁰ Report of the Scottish Departmental Committee on Nursing, [Cmd 5866], 1938, p.2.

of the hospitals and the fact that they were often non-approved institutions; that is, training in these hospitals was not recognised for entry to the Nursing Register. As a result they 'practically had no choice of candidates.'²¹

Wastage was an even greater problem than the inability to attract recruits. In the post-war period the drop-out rate during training was fifty per cent for all hospitals. For sanatoria it was estimated to be sixty-five per cent, while mental hospitals suffered from an eighty per cent wastage rate.²² The working party which was appointed to determine how best to recruit, train and deploy nurses for the forthcoming National Health Service reported that recruitment campaigns would be ineffective,

so long as the causes of wastage are operative A girl who abandons training is likely to become a counter-acting agent The problem to be dealt with is not how to fill a leaking vessel but how to stop the leak.²³

Drawing upon official reports, contemporary sources and the personal reminiscences of ex-nurses this section

21 ibid., p.9.

22 Tubercle, December 1947, p.256. Health Bulletin, November 1947, p.70. In her book, Nursing and Social Change, Monica Baly claims that these figures were distorted by exceptional circumstances. 'Because of the Control of Engagement Order many students had come into nursing to avoid being drafted into factories and the armed services and, of course, in those circumstances there was practically no selection: when the controls came off in 1946 they not unnaturally abandoned training, a fact that both the Report (Working Party on the Recruitment and Training of Nurses) and Professor Abel-Smith omit', p.204. Be this as it may, and Baly offers no evidence to show how extensive draft dodging was, the caveat does not alter the fact that tuberculosis hospitals had particular staff retention problems.

23 Tubercle, December 1947, p.258.

will outline the effect of the failure to both recruit and retrain staff on tuberculosis institutions, the reasons why they had difficulty in so doing, and the measures, short and long term, adopted to meet the staffing crisis.

a) The Extent of the Crisis

The most obvious and dramatic effect of the inability either to recruit or retain nurses was that staffing levels deteriorated, leading eventually to ward closures in the 1940s. In this case it is difficult to separate cause and effect; that is, fewer nurses meant longer and harder hours of work for those remaining, making the job even less attractive. The crisis, therefore, was self-reinforcing.

The staffing crisis reached its peak in the immediate post-war years, but the recruitment problems were already evident in the 1930s. In January 1936 Glasgow Corporation approved in principle that working hours for nurses in the municipal hospitals be reduced from fifty-six to forty-eight per week. This, however, could not be implemented until more nurses were recruited and the accommodation to house them erected.²⁴ In 1937, when recruitment remained poor, a sub-committee was appointed to report on the whole problem of wages and conditions of service.²⁵

²⁴ Glasgow Corporation Health Committee Minutes, S.R.A. C1/3/94, January 1936.

²⁵ Ibid., C1/3/96, October 1937.

As early as 1936, Robroyston Hospital reported that a permanent shortage of nursing staff was preventing the full use of some wards.²⁶ The great increase in the incidence of respiratory tuberculosis after 1939, together with the disruption caused by the introduction of the Emergency Hospital Scheme, exacerbated an already deteriorating situation. In 1931, the waiting lists for entry to Glasgow's tuberculosis hospitals and sanatoria numbered ninety-one. By 1945 they had reached 1,223.²⁷

At Robroyston,

a crisis was reached in September 1945 when it was decided, as the only possible way of ensuring adequate nursing, to stop all admissions for a period and to lower the number of beds available for tuberculosis.²⁸

Wards which had hitherto been staffed by twelve nurses were being staffed by seven. Mearns Kirk and Law Junction hospitals reported similar 'critical' situations.

b) Reasons for the Crisis

Why did hospitals, and tuberculosis hospitals in particular, have such difficulties in attracting and retaining student nurses? Two explanations are to be found at the macro level; the fall in the birth-rate meant that there were fewer girls available and the partial recovery of the economy in the later 1930s meant greater competition from other employers. The latter was particularly significant because of the time-lag between

²⁶ M.O.H. Report Glasgow 1936, p.341.

²⁷ Corporation Health Committee Minutes, SRA C1/3/-.

²⁸ M.O.H. Report Glasgow 1945, p.188.

a girl leaving school and entering nursing. In the 1930s, nurses could not begin training until they had reached the age of twenty. After working for a period of five years and attaining a degree of financial and familial independence, potential students would have thought twice before entering the cloistered world of the nurses' home. Many potential recruits would also have been married by age twenty and married students were not accepted at this time. As recruitment became more difficult, the municipal hospitals led the way in reducing the entry age to nineteen and then to eighteen at the end of the decade.²⁹

The most serious recruitment and retention problems, however, lay within the profession itself. Although not peculiar to tuberculosis institutions, wages and conditions of service were the main causes of discontent. Tuberculosis institutions suffered disproportionately because the nurses who did complete training could afford to be particular about not working in the more unpopular branches of nursing.

In the 1930s, a staff nurse in a municipal hospital was paid £70 per annum. This was raised to £90 in 1941.³⁰ Although food and board were provided, nurses had to supply their own uniforms. First-year probationers received £30 per annum in the municipal hospitals. The Committee established in 1938 to report on wages and conditions regarded this as adequate because the probationer was undergoing training.

²⁹ Report on Nursing 1938, op.cit., p.5.

³⁰ Corporation Health Committee Minutes, June 1941.

Nurse A recalls starting as a student in Ruchill in 1938 and being paid the princely sum of 27/6d a month, about £15 per annum.³¹ There may, therefore, have been other deductions besides that for uniforms. Nurse B, one of the first male nurses in Robroyston, was paid £1 a week in 1946. With his board provided, he regarded this as pocket-money, which, in effect, was about all it amounted to.

It would appear that male nurses, at least at junior grades, were paid about twice as much as females. It is difficult to compare the wages of staff nurses, as females were still required to be resident in 1947, while male nurses' wage scales made no allowance for board. All first-year student nurses had to live-in, however, irrespective of sex. Under the new pay scales proposed in 1947, first year male students were to receive £100 per annum, females only £55.³²

Under the new wage structure, staff nurses were to be paid according to length of service. A Registered General Nurse with one year's service was to be paid £120. With the retail price index doubling between 1936 and 1947, staff nurses were worse off in real terms than they had been before the war on a salary of £70.

To encourage staff to enter and remain in tuberculosis nursing, nurses in the grade of ward sister

31 Interview.

32 Scottish Nurses' Salaries Committee (Fifth Report), [Cmd 7328], 1947, p.66, p.108. The salary for female students was quoted as an annual sum, while that for males was quoted as a weekly wage. A rather clumsy ploy, perhaps, to disguise such a marked differential.

and lower were to be paid a bonus of £40 at the end of the first two years of continuous service, and £20 for each subsequent year. Nurse E, however, recalls receiving only £5 as an annual tuberculosis bonus. RGNs serving in a tuberculosis hospital were also to receive £10 per annum more than those in general hospitals.³³

It was, perhaps, as well that nurses received such a pittance, for they had little time in which to spend any of the money. Nurse A was allowed one and a half days off a month and, even then, had to be back in the nurses' home by 10 pm. Lectures and tutorials were delivered on the students' time, not the hospitals'. The ex-nurses all remembered the struggle to keep awake during lectures after completing a twelve hour night-shift.

Off-duty hours formed another bone of contention, particularly for the junior staff. Nurse G recalls that days off would often be cancelled at a moment's notice, depending on the staff situation. Time-off was regarded as a necessary evil by the nursing hierarchy who failed to understand that not everyone existed for the hospital.

Abel-Smith has described the 1947 Report of the Working Party on the Recruitment and Training of Nurses as

the most outspoken and well-documented condemnation of the attitudes and behaviour of senior nurses yet published.³⁴

³³ *Ibid.*, pp.32 and 69.

³⁴ B. Abel-Smith, A History of the Nursing Profession, (1960), p.182.

The Report's main recommendation to halt the exodus from nursing was that, 'nurses in training must no longer be regarded as junior employees subject to an outworn system of discipline'. It further recommended that senior nursing posts be filled only by those 'who possess the capacity for developing satisfactory human relationships'.³⁵

All the ex-nurses spoken to commented upon the rigid discipline and petty regulations imposed by the nursing hierarchy. Nurse A, for example, was sent to the Matron by her ward sister to explain how she had broken a thermometer (price 6d.). Rather than repeat the ordeal whereby she had been kept waiting outside the Matron's office for an hour before castigation, she henceforth replaced any broken equipment from her own pocket. There was no escaping the constant supervision, even at mealtimes. The nurses sat down together for their meals in order of rank, from the Matron at the top of the room to the youngest probationer at the door, and 'hell mend the nurse who ate before the sisters'. The nurses' homes offered little refuge either. Nurse G remembered the weekly room inspections as being particularly humiliating.

Nurse E, in Robroyston in 1948, thought that the senior staff regarded the juniors as 'expendable'. As a male nurse, he was ignored by the ward sister and had to be shown his duties by a ward maid. He considered the wardmaids, mostly 'no-nonsense wifies' from Blackhill, to

³⁵ Tubercle, 1947, p.256.

have formed the real backbone of Robroyston. The contempt for juniors must have been considerable, for he was not told that he was working in a tuberculosis hospital. When he asked the wardmaid what a particular patient was suffering from, he was told,

ra bug.
 And what about this one?
 Ra bug.
 And him?
 Ra bug.
 Have they all got the bug?
 Son, ra whole hospital's got ra bug.

This conversation was reported to have occurred four days after he started work. He regarded the sisters as being either man-haters or homosexuals. Nurse B, another male, claimed he was treated by the sisters as a 'glorified porter' and described them as being 'real battleaxes'. He did, however, add that they were extremely dedicated. Nurse F thought that the student nurses were regarded as 'cheap labour'.

In the 'closed' world of the institution, the strict discipline and high-handed attitude of the senior staff must have been oppressive. If a student fell foul of a particular martinet, there would have been no hiding-place. It is difficult to believe, however, that discipline was the most important factor in accounting for the high turnover in staff. There were no such shortages in the 1920s when discipline was, presumably, tighter. In the 1940s, moreover, the armed services had little difficulty in attracting nurses to jobs where,

discipline was strict and authority hierarchical, life laced with restrictions, and enforced posting an accepted way of life.³⁶

The three male nurses interviewed had all been ex-servicemen and, as such, were presumably inured to a world of petty regulation.

The 1947 Working Party ascertained, through job analysis, that a quarter of a student's time in training was spent performing domestic duties, considerably longer in the first year and less in the final year. It was recommended that students should spend the first two years of training in nursing schools rather than as workers on the wards. This, however, was totally impracticable. As students generally accounted for about half of all nursing staff, to have reduced their numbers by two-thirds would have necessitated a massive influx of recruits.

The problems discussed so far were common to all forms of nursing, but the tuberculosis institutions had particular difficulties in attracting staff. The work in sanatoria and tuberculosis hospitals was more physically demanding than in general hospitals, partly owing to the treatments involved and partly owing to the fact that they were chronically understaffed.³⁷

Nurse E remembers performing 'physically very demanding work' at Robroyston. One chore peculiar to the tuberculosis hospitals was the constant refilling of the china-pig hot-water bottles. Each bed contained three of

³⁶ Baly, Nursing and Social Change, op.cit., p.187.

³⁷ Tubercle, September 1948, p.202.

these to enable patients to survive the extremes of 'open air' treatment in Scotland and they needed refilling at least twice a day. Another onerous duty was to turn hip and spine cases periodically to prevent bed sores. The large carbolic steam-sterilizers were also hard work to operate as well as being dangerous. Nurses were often scalded while sterilizing sputum flasks and crockery. Tuberculosis wards had to be kept even cleaner than general wards because dust was anathema. Nurse F recalls his training of consisting of 'mostly cleaning and polishing'.

The tuberculosis hospitals must also have been more depressing than the general hospitals. It was reported in 1916 that nurses only served on the tuberculosis wards for a maximum of six months.³⁸ In 1945, the Superintendent at Robroyston wondered,

whether or not this mass of untreatable disease (sixty-six per cent of admissions that year were at an 'advanced stage') is not one deterrent to nurses joining the staff.³⁹

Tuberculosis nurses were in an anomalous position with respect to the Nursing Register. For those nurses training in hospitals which treated other infectious diseases, such as Ruchill, there was no problem. These students would spend their allocated time in the tuberculosis wards before sitting the examination for the fever part of the Register. Municipal hospitals treating mostly tuberculosis cases, such as Robroyston, Mearnskirke

³⁸ W. Davidson, Glasgow Medical Journal, 1916, p.68.

³⁹ M.O.H. Report Glasgow, 1945, p.188.

and Hairmyres, were not recognised by the General Nursing Council because they provided only a limited opportunity to study infectious disease. As such no part of the Register was open to students training in these hospitals.⁴⁰ These nurses could qualify, however, for the Certificate in Tuberculosis Nursing offered by the British Tuberculosis Association. Although the 1936 Departmental Committee on the Training of Nurses recommended that this anomaly be removed by the inclusion of a supplementary part of the Register for tuberculosis nurses, no action was taken until the merging of the hospitals under the N.H.S.

None of the interviewed ex-nurses experienced any difficulty with respect to recognition of their training. This may have been because those who worked in Robroyston did so after the war. Nevertheless, the non-approved status of the tuberculosis hospitals must have contributed to their inability to attract students. In 1943, Robroyston had seventy student nurses out of a total nursing staff of 242; that is, twenty-nine per cent were students. In 1939 fifty per cent of all nurses in England and Wales were students.⁴¹

40 Robroyston and Mearns Kirk Hospitals were partly upgraded in 1938. The opening of puerperal fever and pneumonia wards allowed both hospitals to be recognised for the first part of the General Nursing Certification. Nevertheless, it was still being reported from Robroyston in 1945 that, 'entrance to the nursing profession by way of hospitals for tuberculosis is the least favoured of the avenues to training.' The Superintendent argued that the congregation of too many tuberculosis patients in one hospital lay at the root of this problem. S.R.A. D-HE 2/1, p.14.

41 Abel Smith, History of Nursing, op.cit., Appendix 1.

The widespread belief that respiratory tuberculosis was highly infectious was probably another deterrent against young women entering sanatoria as nurses. Whether or not they were at greater risk is not as important, from the point of view of recruitment, as the fact that they were perceived to be at greater risk.

There were many conflicting and unsubstantiated reports concerning the vulnerability of nurses. In his retirement speech of 1928, Dr James Crocket, Medical Superintendent at Bridge of Weir, claimed that sanatorium life was responsible for the fact that although,

they had had hundreds on the staff, not one of those had, as a result, developed tuberculosis, although the liability to infection was unquestionably great.⁴²

W.A. Murray recalled that the Glenafton nursing staff in the 1930s were:

almost entirely women and they accepted the drawbacks of isolated hospital sites and the danger of infection - all too often pointed out with exaggeration by kind friends. Infection undoubtedly took place but I only remember one case of serious disease acquired by a nurse. It was doubly sad, as we found out that she had been having a risky clandestine affair with a patient.⁴³

The Medical Officer, on the other hand, reported in 1935 that, 'for many years it has been known that tuberculosis was especially prevalent among nurses in training.' The

⁴² Glasgow Herald, 2 April 1928, p.8.

⁴³ W.A. Murray, A Life Worth Living, (Haddington), 1982, p.38.

article went on to quote the findings of a Dr Stewart who reported that five per cent of all inmates of a sanatorium in Manitoba were either nurses or student nurses and that tuberculosis morbidity among the latter was twelve times greater than that of the general population.⁴⁴

It is difficult to determine just how vulnerable nurses were, although common sense would tell us they were running a risk. Student nurses worked long arduous hours and were at an age, moreover, when respiratory tuberculosis incidence peaked among females. The most extensive study undertaken was the Prophit Survey published in 1948.⁴⁵ Although intended as a detailed study of all young adults, the Survey was constrained by the war to concentrate on nurses alone. As such it suffered from not having recourse to a representative control group. Nevertheless, by sub-dividing the nurses into those who worked in tuberculosis hospitals and those who worked in general hospitals, the authors claimed they could prove that the higher rate of tuberculosis morbidity amongst the sanatorium nurses was caused by their being repeatedly exposed to infection.

Unfortunately, as was pointed out in Tubercle, like was not being compared with like.⁴⁶ The group A nurses (those who had worked in tuberculosis wards) generally came from a socially less-favoured section of the population than

44 Medical Officer, 30 March 1935, p.137.

45 Tuberculosis in Young Adults - Reports on the Prophit Study, 1935-44. Royal College of Physicians, 1948.

46 A.L. Jacobs, 'The Prophit Survey - an Analytical Review', Tubercle, September 1948, pp.201-207.

those in group B (no tuberculosis nursing); had worse general health upon entry; had lower educational standards (it was not explained why this should predispose towards contracting clinical tuberculosis); and worked under much greater strain (30-43 nurses per 100 beds as against 67-72 nurses per 100 beds). More importantly, perhaps, was the fact that group A contained a far higher proportion of girls from Ireland and Wales who had a 'lower natural resistance'. Nonetheless, although the Survey may not have established exactly why tuberculosis nurses were more vulnerable, it did demonstrate that they ran a far greater risk than their colleagues in general hospitals.

Some steps were taken to protect nurses, but there was never any proper barrier-nursing in sanatoria. Nurse C, however, can remember masks being introduced while making beds at Ruchill. The practice was quickly abandoned as impractical. She also recalls that staff were x-rayed every six months. At Robroyston, Nurse B remembers being x-rayed and weighed every month. One of the nurses interviewed contracted respiratory tuberculosis during training at Robroyston. He was sent to Tor-na-Dee to recuperate and, following a phrenic crush, was back at training within six months. All the ex-nurses could recall colleagues who had contracted the disease, as, too, could many ex-patients. The Irish and Highland nurses who helped keep the municipal hospitals viable during the recruitment crisis, were particularly prone to infection. Nurses were the first group in the

population to be given B.C.G. once trials were approved in 1949.⁴⁷

If a nurse was unfortunate and did contract the disease in the performance of her duties, she had no recourse to the law. Tuberculosis was not a scheduled disease in terms of the Workman's Compensation Act 1925. The Health Committee Minutes record numerous cases of staff claiming compensation from loss, injuries and damage from Glasgow Corporation in the 1930s and 1940s. All such claims were repudiated until December 1946 when a pupil midwife, who claimed to have contracted respiratory tuberculosis at Stobhill, was awarded an undisclosed ex gratia payment. The M.O.H. was then instructed to,

report as to the steps which might be taken whereby evidence could be furnished which would enable a decision to be arrived at more readily on the question of the attributability or otherwise of the disease to Corporation service.⁴⁸

Tuberculosis was included as a scheduled disease under the National Insurance (Industrial Injuries) Act 1946, but claims were still bedevilled by the problem of proving the disease was, in fact, contracted at work. In 1950, for example, a Tribunal refused compensation to a Tuberculosis Officer on the grounds that his contracting

47 Lanarkshire County Council inaugurated a scheme for the rehabilitation of infected nurses at Hairmyres Hospital in 1947. The scheme was hindered by Glasgow Corporation's refusal to participate and was wound up the following year with the introduction of the N.H.S. Corporation Health Committee Minutes, S.R.N. November 1947. D1/3/117.

48 Ibid., 18 December 1946, C1/3/114.

the disease was a 'process' rather than an 'accident'. Earlier, however, the Court of Appeal had granted compensation under the Act to a nurse who had contracted the disease while nursing tuberculosis patients.⁴⁹ Tuberculosis institutions thus had particular problems in recruiting nurses. Prior to the introduction of chemotherapy the work was regarded as unglamorous, unrewarding, depressing, monotonous and arduous. Sanatoria, in addition, were often situated in remote areas far from centres of population, while fear of infection may also have deterred potential recruits.

c) The Response to the Crisis

Many expedients were introduced in an attempt to circumvent staffing problems. 'Do-it-yourself' nursing by the patients themselves was introduced into 'hostel' wards at Robroyston and Law Junction in 1947.⁵⁰ The latter's scheme was very much in the spirit of post-war democratic socialism, a committee being formed to elect a ward leader in the absence of nurses.

Earlier, during the war, the situation was deemed so critical that Glasgow's M.O.H. applied to the Corporation for permission to engage, temporarily, married women and to retain female employees after marriage. His suggestion

49 B.M.J., 1950(1), p.1145. B.M.J., 1949(1), p.960.

50 Health Bulletin, Vol.6, No.1, 1947, p.13. In July 1948 the Chief Medical Officer of the Department of Health for Scotland wrote to superintendents of every hospital in Scotland asking them to consider establishing similar schemes. Sir J. Brotherston, 'The NHS in Scotland' in McLachlan, (ed). Common Weal, op.cit., p.109. See also Chapter Six below.

was taken up but only on condition that the Health Committee approve each appointment.⁵¹

Other expedients involved a recruitment drive undertaken by the Nuffield Provincial Hospital Trust, the establishment of intensive training courses at Law and Strathcarto for ex-service nursing orderlies and the introduction of male nurses. In September 1946 a 'critical situation' was averted at Mearnskirk by the appointment of male student nurses and a 'large number' of male probationer assistant nurses.⁵² In the same year, the Corporation introduced part-time nursing into Robroyston and Mearnskirk. Based on a scheme operated in Gloucestershire, it initially caused a good deal of friction between the part-timers and overburdened full-timers who, 'had carried the hospitals through previous crises.' Fortunately everything was 'settled amicably.'⁵³

The most interesting scheme devised to beat the nursing shortage was an experiment conducted at Bellefield in 1946. Under this scheme selected female patients were offered the opportunity to train as tuberculosis nurses upon discharge.⁵⁴ Initially the ex-

51 Glasgow Corporation Health Committee Minutes, 12th January 1942.

52 M.O.H. Report Glasgow 1946, p.187, Lancet, 23 February 1946, p.282, 22 July 1946, p.147.

53 The Eastern Regional Hospital Board introduced a scheme in the early 1950s whereby volunteer student nurses could spend three months of their general training in a tuberculosis Hospital. The scheme allowed 140 beds to be brought back into service at Easy Fortune Sanatorium. J.S. Campbell, Tuberculosis and the Individual, op.cit., p.55. The scheme was not adopted in the Western Region hospitals because it was feared that it would interfere with established training schemes.

54 David Kissen, 'An experiment in the rehabilitation of the tuberculous', Tubercle, September 1947, pp.185-188.

patients worked a twenty-four hour week, later increased to thirty-six hours. They were paid the same rate as probationer nurses in proportion to hours worked. In all, eleven girls participated. The scheme was not primarily designed to rehabilitate the girls, but to prevent ward closures owing to lack of staff. That this was so is evinced by the fact that the scheme was abandoned as soon as the worst of the crisis had passed. The scheme would probably have collapsed anyway. Six of the girls resigned within six months of beginning training. They did so mainly because the wages they received were less than the money they could claim under the Tuberculosis Allowance. Lanark's remoteness from Glasgow, where all the girls lived, was cited as another reason for their reluctance to stay. That the staff managed to persuade anyone to stay in a sanatorium longer than was absolutely necessary perhaps supports the view, to be examined in the next chapter, that some tuberculosis patients became institutionalised and feared returning to the outside world.

Such short-term solutions proved wholly inadequate. In 1948 the Department of Health for Scotland reported that the waiting-list for respiratory cases alone had reached 2,500 and that 570 beds were lying empty because of staff shortages.⁵⁵ The introduction of the N.H.S. did not solve the problem overnight. In January 1956 it was decided that all nurses starting their training in

⁵⁵ Report of the Department of Health for Scotland 1948, [Cmd 7659], 1949, p.32.

Scotland had to spend at least eight weeks nursing in tuberculosis wards, unless exempted on medical grounds.⁵⁶

Despite the pay-rise of 1941 and the reduction of the working week to 48 hours there was still, 'no improvement in recruitment of student nurses on whom the future of the nursing profession depends.'⁵⁷ The numerous pre-N.H.S. reports into nurses' pay, conditions and training failed to convince the employers. Hospitals still depended on students to staff the wards, living-in remained mandatory and the hierarchical structure was unchanged. While the post-war years saw a slackening of over-rigid discipline and the creation of the N.H.S. eased some of the handicaps peculiar to tuberculosis nursing, the fundamental problems of low pay and divorcing training from work remained. As long as governments and employers were able to staff hospitals with grossly underpaid trainees, they were unlikely radically to restructure student training. As will be seen, the crisis in the tuberculosis service was not resolved by any great expansion of the existing services, the lack of staff precluded this, but rather by the introduction of effective chemotherapy which both hastened patient throughput and eventually, by reducing the number of infectious cases in the community, cut the number of new cases seeking beds.

⁵⁶ Campbell, Tuberculosis and the Individual, op.cit., p.56.

⁵⁷ M.O.H. Report Glasgow 1947. An earlier report on the nursing crisis by the Tuberculosis Society of Scotland concluded that propaganda had been a complete failure in regard to the recruitment of nurses into the tuberculosis service, E.M.J., 1946, p.71.

4. B.C.G.

Albert Calmette and Camille Guerin worked on B.C.G. over a long period culminating in the development of a safe vaccine in 1923. The theory of B.C.G. is similar to that of smallpox vaccination; the vaccine consists of a non-virulent organism capable of giving protection against subsequent infection by a virulent organism. Persons who had no previous contact with tuberculosis could be given the vaccine to develop an acquired resistance to the disease. The original B.C.G. consisted of attenuated live bacilli suspended in ox-bile. Despite the French government using the vaccine on new born infants as early as 1924 and the League of Nations Health Committee adopting it in 1928, B.C.G. was not introduced to Britain until 1947 and was not widely used in Scotland until the early 1950s.

B.C.G. proved to be highly successful, conferring protection against tuberculosis for up to six years. In a 1978 survey, it was found that the notification rates for tuberculosis amongst those vaccinated with B.C.G. in the fifteen-nineteen age group were only one quarter of the rates prevailing amongst an unvaccinated group.⁵⁸ Today B.C.G. vaccination is regarded as one of the most important as well as one of the cheapest methods of preventing tuberculosis, particularly in the third

⁵⁸ 'The Effectiveness of B.C.G. Vaccination in Great Britain in 1978', British Journal of Diseases of the Chest, 1980, p.215.

world.⁵⁹ Why, then, did it take so long for such a successful weapon to be wielded in the struggle against tuberculosis in Great Britain?

Smith and, to a lesser extent, Clayson put the blame on the tuberculosis 'establishment', and on Sir Robert Philip in particular, who, it is argued, were incapable of adopting any initiative which did not come from themselves. Smith also posits that national rivalries amongst medical-scientific communities may also have been a significant factor in delaying the acceptance of B.C.G.⁶⁰ While, undoubtedly, Philip was over cautious in his reluctance to even countenance trials of B.C.G., his influence, in this case, should not be over exaggerated. The United States, amongst others, also refused to believe the claims made for the vaccine. Use of the vaccine was a very controversial matter mainly because the statistical evidence in its support was initially very patchy. The vaccine was also unstable and it has since been established that the protection offered by B.C.G. varies according to ethnic background.⁶¹ The Lubeck disaster of 1931 also set back the cause of B.C.G. considerably, in Great Britain. The 1931 Conference of the N.A.P.T. rejected B.C.G. at Philip's behest, preferring instead to rely on their own anti-tuberculosis

59 Crofton and Douglas, Respiratory Diseases, op.cit., p.203.

60 Smith, Retreat, op.cit., pp.194-203. Clayson, 'Tuberculosis' in McLachlan (ed), Common Weal, op.cit., pp.403-404.

61 Smith, Retreat, op.cit. p.203.

service which they believed to have contributed significantly to the decline in mortality.

Before the war, only one acceptable controlled trial was conducted on the vaccine. This was undertaken by Aronson amongst North American Indians and revealed that the vaccine conferred a high degree of protection.⁶² After Aronson's trial there could no longer be any valid excuse for not using B.C.G. Its use during the war would have provided far more benefit than the measures proposed by the Wartime Committee on Tuberculosis.

B.C.G. was first used in Scotland in 1949. Nurses were the first group to be offered the vaccine as part of the recruitment campaign to allay fears of contracting the disease at work. B.C.G. was a particular blessing to the Highland and Irish nurses who possessed little natural resistance to the disease. Medical students and contact cases were next to be offered B.C.G. In 1952 all school leavers aged over thirteen were offered B.C.G. in an effort to protect the age-group approaching peak morbidity. Pupils were given a Mantoux skin test to ascertain whether they were tuberculin positive or negative. Those who proved negative, that is those who had never been infected by the bacillus, were offered the vaccine. In the 1950s this represented about twenty-five per cent of the age-group concerned. The move to universal usage was hampered by the fact that Britain did not manufacture the vaccine and its importation was

⁶² Crofton and Douglas, Respiratory Diseases, op.cit., p.203.

expensive. In 1956 the Medical Research Council reported that controlled trials of B.C.G. had completely vindicated its use.

There can now be no doubt that had trials been fully supported in the 1930s, the death toll from tuberculosis would have been much diminished. The vaccine would have been a particularly powerful weapon in areas such as Glasgow where contact infection was much higher than elsewhere. The failure to implement trials is an indictment against a system which encourages the curative role of medicine at the expense of the preventive.

5. THE NATIONAL HEALTH SERVICE

When Aneurin Bevan inaugurated the National Health Service in 1948 it was not organised municipally, as had long been Labour Party policy, but nationally through Regional Hospital Boards. The consequences for the tuberculosis services, based almost entirely as they were at the municipal level, were profound. The disruption, however, was not as serious as envisaged by some, particularly M.O.H.'s, because the introduction of the N.H.S. enjoyed the good fortune of coinciding with the development of streptomycin. More than any other disease, tuberculosis was a major threat to the fledgling N.H.S., not only because its treatment was long term and expensive but also because its principal victims were tax payers. Although the disease was not as endemic as it had been when National Insurance had been introduced in 1911,

morbidity rates were still at a level capable of severely straining the new organisation, particularly in Scotland.

The Labour Party's decision to abandon its commitment to municipal medicine was brought about primarily by the need to placate an already disgruntled medical profession which had bitter memories of dealing with the more cost-conscious local authorities. Bevan triumphed over Morrison in the cabinet and it was decided that the new service should be organised regionally.⁶³ Two major consequences followed the demise of municipal responsibility for treating tuberculosis; the treatment of the disease was brought back within the ambit of mainstream medicine, and the preventive and curative functions of the service were pushed further apart. From 1948 tuberculosis dispensaries, now under the control of Regional Hospital Boards, were redesignated as 'chest clinics'.⁶⁴ It was recommended that they now be attached to general hospitals rather than stand on their own as hitherto. They were now to treat all chest ailments and not just tuberculosis. Similarly, sanatorium superintendents and tuberculosis officers were in future allowed to bask under the more professional sounding title of chest physician. More importantly, the treatment of respiratory and non-respiratory tuberculosis became

63 Brotherston 'The N.H.S. in Scotland' in McLachlan (ed), Common Weal, op.cit., pp.88-96. C. Webster, The Health Services Since the War Vol. 1, (H.M.S.O.), 1988, pp.82-84.

64 The new name had none of the stigma attaching to the old dispensaries, an important consideration at a time when those detected by mass miniature radiography were being encouraged to attend clinics for a more thorough examination.

divided, a long overdue reform given the great differences in treatment attaching to the various locations of the disease. The move to bring the treatment of tuberculosis in from its once physically and professionally isolated position was not altogether welcomed by the former specialists.

We wondered whether the Chest Service might be swallowed up as a minor speciality within general medicine. We saw this as a danger, knowing as we did, that at least a minority of our colleagues felt that our efforts over the years had not achieved much and that some of us who had suffered from tuberculosis were seeking a comparatively quiet life, apparently free from the academic stresses of some other fields.⁶⁵

The M.O.H.s were also understandably loth to relinquish control over such a large part of their fiefdoms. Upon the publication of the White Paper on the NHS, the Joint Tuberculosis Council called for all aspects of tuberculosis to be treated as one speciality by the Tuberculosis Service, the Senior Officers of which should have the status of consultants. The M.O.H.'s, however, were to be sorely disappointed.⁶⁶ After 1948 their responsibility would be limited to health visiting, rehousing and rehabilitation. They complained that it was a mistake to separate the preventive and curative functions of the service, arguing that the disease was essentially a social problem requiring social solutions. Glasgow's M.O.H., Laidlaw, was not slow to express his disapproval,

⁶⁵ Murray, Life Worth Living, op.cit., p.42.

⁶⁶ Public Health, September 1944, p.140.

The recent legislation which passed to a hospital authority the control of clinics, mass radiography and sanatoria is wrong in concept and is detrimental to the service.⁶⁷

While the M.O.H.s had a genuine complaint concerning the separation of responsibility for treatment and prevention, the local authorities own record in the interwar years, when the great bulk of available resources was channeled into prestigious but ineffective institutional treatment, left much to be desired. In response to the complaints, health authorities were urged to co-operate closely with local authorities in co-ordinating all anti-tuberculosis measures. Whether or not the division of responsibility was detrimental to the victims of disease is impossible to assess because chemotherapy completely distorted the pre and post-war patterns of mortality and morbidity.

The five regions created under the E.H.S.; Northern (Inverness), North Eastern (Aberdeen), Eastern (Dundee), South Eastern (Edinburgh) and Western (Glasgow), were designated as regional hospital boards and made responsible to the Secretary of State for Scotland for health care under the National Health Services (Scotland) Act 1947.⁶⁸ More beds were gradually made available for the treatment of tuberculosis so that by 1952 there were some 5,896 beds, an increase of 1,100 over the 1948 figure. There were, however, still marked differences in

67 M.O.H. Report Glasgow 1948, p.10.

68 The Scottish Act did not differ in any important respect to the national Act in its provisions for the treatment of tuberculosis. For the differences, see Webster, Health Services Since the War, op.cit., pp.103-107.

regional bed compliments. The most generally used index for hospital-bed provision for tuberculosis was the bed-death ratio and it was deemed that the minimum ought to be three beds for every death. By such a criterion, there was still a major bed shortage in Scotland in 1952.

Fig. 5(ii)
Tuberculosis Bed Availability by Region⁶⁹

	Scotland	Western	S.Eastern	Eastern	N.East	North
1951	5681	3223	818	803	589	248
1952	5896	3303	937	809	587	260
3 x Ave. Mortality 1948-50	8937	6174	1461	594	395	313

As can be seen from Fig.5(ii), the greatest shortages were in the Western Region centred on Glasgow and the West of Scotland where there were some 2,800 beds short of the desired minimum.

The problem was such that the National Health Services Bill 1951 introduced, alongside dental and optical charges, a scheme whereby tuberculosis patients undertaking treatment in national health hospitals could be sent to sanatoria in Switzerland. The 'Swiss Scheme' as it came to be known, had originated in Holland and was a last attempt by the Swiss 'sanatorium industry' to re-

⁶⁹ Respiratory Tuberculosis in Scotland. Association Scientific Workers, op.cit., p.15.

establish itself as the treatment centre of Europe in the face of the increasingly effective competition offered by the new tuberculosis drugs. At a time when the opportunity for international travel was extremely limited for the majority of people, it was hoped that the Swiss Scheme would capture the imagination of the public. To this end the Scheme was accorded a great deal of publicity, publicity which diverted attention away from the issue of bed shortages.

(the scheme) made the public at large realise that the authorities were determined to do something about what had almost become an epidemic of tuberculosis.⁷⁰

However, as Webster points out, the publicity backfired when health authorities were swamped with applications from people demanding that relatives be placed on the Scheme.⁷¹ Recognising Scotland's particularly dire record with respect to tuberculosis, Scottish patients were allowed half the places provided. In all, some £400,000 per annum was made available to fund the Scheme.

By the time the Scheme was wound down at the end of 1955, 1,043 Scottish tuberculosis patients had received treatment in Swiss sanatoria. East Fortune served as the selection centre for patients from Eastern Scotland while Robroyston served for the rest of the country. The former were sent to the Wolfgang Sanatorium a few miles outside of Davos while the latter were sent to Leysin in the French-Swiss part of the country. Only those fit enough

⁷⁰ Murray, Life Worth Living, op.cit., p.55.

⁷¹ Webster, Health Services Since the War, op.cit., p.324.

to travel and with a good prospect of recovery were selected.

Given the dubious rationale upon which sanatorium treatment was based, the medical benefits conferred on those transferred must have been at best, marginal. The Scheme allowed 250 beds per annum to be released for other tuberculosis cases in Scotland. However, had the money been invested in the new drugs becoming available the extra beds may not have been needed at all. The Scheme was thus no more than an expedient devised to direct attention away from the crisis in the tuberculosis service in the early 1950s.

In the event, the introduction of effective chemotherapy made the Swiss Scheme redundant. More importantly, chemotherapy first eased and then eliminated the bed shortage problem. It accelerated patient throughput while at the same time reducing the number of new cases needing hospital treatment. Although expensive, once it was discovered how to administer the new drugs effectively, chemotherapy saved the National Health Service from concentrating resources on the long-term treatment of respiratory tuberculosis. The disease, in turn, bequeathed to the nascent Service a large number of institutions which could be and were utilised as general hospitals at a time when capital expenditure on the Health Service faced severe constraints. Tuberculosis hospitals such as Robroyston, Hairmyres, East Fortune, Bangour and Law Junction were to serve the Health Service for decades after tuberculosis had ceased to be the

social menace it had once been. The legacy for the Health Service, however, was a disparate collection of cheaply built, exposed, and often isolated hospitals which had never been intended for the treatment of the general population.

6. CHEMOTHERAPY

The development of effective chemotherapy and the subsequent conquest of tuberculosis in the developed countries of the world has generally been treated as no more than a postscript in historical studies of the disease. McKeown's familiar graph which depicts the advent of chemotherapy as delivering no more than a coup de grace to a disease which was retreating of its own accord has tended to distract from the enormous benefits which were conferred upon the post-tuberculosis generation (See Fig.1(i)). Moreover, prior to chemotherapy the disease was still rife in Scotland. It was most certainly not under control, let alone retreating of its own accord.

The discovery and development of penicillin had channelled the age old search for a substance which could kill tuberculosis without killing the patient towards the nascent science of microbiology.⁷² In 1944, Selman Waksman, a soil microbiologist, isolated an antibiotic which he designated streptomycin. Waksman took his discovery to the Mayo Clinic at the University of

⁷² For a history of pre-streptomycin chemotherapy see P. D'Arcy Hart, 'Chemotherapy of Tuberculosis', B.M.J., 7 December 1946, pp.849-855.

Minnesota where, with the aid of Feldman and Hinshaw, the drug was rigorously tested.⁷³ Trials established that streptomycin was the first drug capable of arresting tuberculosis in man.

Streptomycin, however, did not prove a universal panacea. It was soon discovered that the bacillus could develop resistance to the drug. Further trials, including an extensive one carried out in 1948 by the Medical Research Council using control groups in Britain, established that the drug could save lives when given to hitherto inevitably fatal cases of meningeal and miliary tuberculosis, but had only limited application in acute respiratory cases.⁷⁴ A limited supply of the drug was made available for treating meningeal tuberculosis at Knightswood Fever Hospital in 1947. The drug effected three recoveries and the patients were able to walk out of the hospital, 'an unprecedented experience'.⁷⁵

73 For a good account of the discovery and development of streptomycin, see Keers, Pulmonary Tuberculosis, op.cit., pp.209-226.

74 It was mistakenly reported that George Orwell was the first person in Britain to receive streptomycin. The drug was extremely scarce at the time because it had to be imported from the U.S.A. and Britain was short of dollars. Orwell received the drug through the good offices of the owner of the Observer newspaper for whom he had written in the past. Observer, 21 January 1990, p.20. Streptomycin could do little to help Orwell. He first received the drug in February 1948 in Hairmyres Hospital. The Collected Essays, Journalism and Letters of George Orwell 1945-50, (London, 1968). Letter to Julian Symons 21/3/48. See also Chapter 6 below.

75 M.O.H. Report Glasgow 1947, p.23. It was later reported that, 'Streptomycin has so far proved disappointing in the treatment of other forms of tuberculosis where its administration requires to be more prolonged. In many of these cases, streptomycin-resistant strains of the tubercle bacillus develop after 6-10 weeks.' M.O.H. Report Glasgow 1948, p.111.

Fortunately, within a relatively short period of time another drug, para-amino-salicylic acid (PAS, for short), was developed which, when taken in conjunction with streptomycin, reduced the opportunity of resistance developing. A third drug, isoniazid, was added to the anti-tuberculosis arsenal shortly thereafter.⁷⁶

Drug resistance proved to be a major problem. It was feared that persons who developed drug resistance would pass on resistant bacilli if they infected someone else. In 1957 it was reported that five per cent of all newly diagnosed patients from clinics throughout Britain were infected by bacilli resistant to at least one of the three main drugs.⁷⁷ As late as 1963, a survey revealed that 566 patients in Scotland had drug resistant tubercle bacilli. Ninety-four per cent of these were from the Western Hospital Region.⁷⁸ The problem of drug resistance in the Eastern region had by then been overcome by the work of John Crofton and his team working from the Royal Victoria, City and Southfield Hospitals.

In order to discover the best combination of drugs to be dispensed to effect a cure without the risk of developing resistance and in order to determine the ideal duration of treatment, Crofton, the third Professor of Tuberculosis at Edinburgh University, assembled a team of clinicians, biologists and surgeons to work in close

⁷⁶ PAS was discovered by Jorgen Lehmann in Sweden in 1946. Isoniazid was developed in 1950.

⁷⁷ J. Crofton, 'Chemotherapy of Pulmonary Tuberculosis', B.M.J., 27 June 1959, p.161.

⁷⁸ Clayson, 'Tuberculosis', in McLachlan (ed), Common Weal, op.cit., p.401.

contact with the city's public health department. To overcome the difficulties imposed by the separation of responsibility brought about at the creation of the NHS, each clinician was given complete responsibility for his own patients even after they had been discharged from hospital. This was deemed essential as the new drug therapy demanded that the patients stick rigidly to the prescribed course of treatment. Earlier 'bad chemotherapy' had failed because patients often stopped taking their drugs, particularly the foul-tasting PAS, once they felt better. This often led to relapse and the development of drug resistance.

By 1958 Crofton's team was able to report on the ideal combination of drugs to be administered to each type of case. 'Good chemotherapy', as it was termed, should be taken for eighteen months to two years. Results quickly revealed the power of effective chemotherapy. Using the new combinations, Crofton was able to convert all sputum positive patients to sputum negative within eight months of starting treatment. The implications for preventing the disease were enormous. Notification of tuberculosis fell in Edinburgh by fifty-four per cent between 1954 and 1957. The ratio of notifications to deaths from respiratory tuberculosis in the city rose from 2:1 in 1946 to 14:1 by 1959. At the later date the notification/death ratio in London, Manchester and Liverpool was 8:1. At the same time Edinburgh enjoyed a lower mortality rate than Paris, Hamburg and New York despite having had a far higher rate only a decade

earlier.⁷⁹ Moreover, ninety-three per cent of surviving patients treated in Edinburgh hospitals in 1953 were still fit for work in December 1956.⁸⁰ The Edinburgh trials proved so successful that Crofton was able to announce a world first in claiming to be able to aim at 100 per cent success in the treatment of respiratory tuberculosis. It was, perhaps, fitting that such an announcement should have been made from the city in which Sir Robert Philip had launched his crusade against the disease seventy years before.⁸¹

Chemotherapy rapidly displaced other forms of treatment. The importance of bed-rest, the cornerstone of treatment for over a century, was undermined following a trial undertaken by the Tuberculosis Society of Scotland. The trial involved treating one group of patients by chemotherapy and bed rest while another group received chemotherapy while continuing to work and live at home as normal. It was found that there was no difference in the response of the two groups to the treatment. In Edinburgh in 1959, half of all newly diagnosed patients were treated while still at work, thus effecting huge savings for the hospital board.⁸²

79 Crofton and Douglas, Respiratory Diseases, op.cit., p.185. J. Crofton, 'Tuberculosis Undefeated', B.M.J., 3 September 1960, pp.679-687.

80 Ross et al, 'Hospital Treatment of Pulmonary Tuberculosis', B.M.J., 1 February 1958, pp.237-242.

81 Crofton, 'Chemotherapy', B.M.J., op.cit., June 1959, p.1613. Like Philip, Crofton, too, was knighted for his services in the struggle against the disease, primarily for his work in the third world.

82 D.T. Kay, Tubercle, 1957. Crofton, 'Chemotherapy', B.M.J., June 1959, op.cit., p.1612.

Artificial pneumothorax was abandoned as, too, was thoracoplasty, although resections were still performed on cavities which failed to close following chemotherapy.⁸³

The development of effective chemotherapy was, indeed, 'one of the fortunate coincidences of medical history.'⁸⁴ In 1950 mortality rates from respiratory tuberculosis in Scotland were stationary, while notifications were rising (Fig. 4(i)). Had the 1945-9 mortality trends continued into the next decade, and without the advent of chemotherapy there is no good reason to assume they might have fallen very far, some 23,000 more Scots would have succumbed to the disease than was the case. For places like Glasgow and the West of Scotland, where social conditions were delaying the retreat of the disease evident elsewhere, chemotherapy proved to be of enormous value.

7. THE CAMPAIGN AGAINST TUBERCULOSIS

The success of chemotherapy enabled the Secretary of State for Scotland, John Maclay, to launch a two-year campaign in 1957 aimed at eradicating tuberculosis. The campaign stressed the curability of the disease and encouraged the population to volunteer for chest x-rays. The most extensive ever mass miniature radiography campaign was launched in Glasgow, which had the highest

83 Ross et al, 'Hospital Treatment', B.M.J., 1 February 1958, op.cit., p.241.

84 Clayson, 'Tuberculosis', in McLachlan (ed), Common Weal, op.cit., p.400.

tuberculosis death rate of any city in Europe in 1957. Thirty-seven mobile radiographic units, brought from all over Great Britain, were set up throughout the city, the largest being situated in George Square. In the course of five weeks during March and April, no fewer than 715,000 Glaswegians had their chests x-rayed. In all, 2,369 active cases of respiratory tuberculosis were discovered and treated.⁸⁵

The campaign was to have been launched three years earlier but the continuing shortage of hospital beds precluded a large influx of newly detected cases. By 1957 empty, staffed beds were available, while 'good chemotherapy' enabled some patients to be treated outwith hospital. An earlier campaign in Greenock had also demonstrated the demand for radiography among the public. The numbers volunteering in Greenock had been so great that many had to be turned away.⁸⁶

The campaign was given massive publicity. Dedication services were held in Glasgow Cathedral, St. Andrew's Church and in the city's synagogues. Every household in Glasgow was sent a letter inviting the occupants to be x-rayed. At the opening ceremony athletes carried torches from the City Chambers to all the thirty-seven wards of

⁸⁵ Glasgow's X-Ray Campaign Against Tuberculosis, (Glasgow, 1957). The original target of the campaign was to x-ray 250,000 people. Some 25,000 people were x-rayed in the first day alone. Glasgow Herald, 12 March 1957, p.9.

⁸⁶ Campbell, Tuberculosis and the Individual, op.cit., p.24. Greenock, at the time, had the melancholy distinction of having the highest death rate from respiratory tuberculosis of any Burgh in Scotland. Its housing record was also one of the poorest in the country.

the city. Publicity also featured 'a talking aeroplane', an illuminated tramcar and two special recordings - Jimmy Logan singing a skit on 'A Gordon for Me', called 'An x-ray for Me' and, for the young, 'x-ray Rock'. Every one examined was given a badge and random gifts of chickens and cigarettes were to be had if a person was seen to be wearing one. ~~All~~those x-rayed also had their name entered in a ballot, the first prize in the draw being an Austin A35 motor car. The campaign also received substantial coverage in the press, the BBC and the cinema. Twelve thousand volunteers from church and youth organisations were needed to back up the medical staff. The publicity alone, cost the Corporation £20,000.⁸⁷ It was certainly effective. Queues for x-rays were reported to be hundreds long. The number of persons x-rayed was a world record for a five week period.⁸⁸

Although similar campaigns were launched in Aberdeen, Dundee and Edinburgh, there was never to be another massive campaign like that in Glasgow again. Random radiology was too haphazard and too expensive. Moreover the reduction in the notification rates in the

⁸⁷ M.O.H. Report Glasgow, 1957, p.63. The car was subsequently won by a 56 year old woman who was herself a tuberculosis sufferer. The 715,000 x-rays taken may not all have been of different people. There were reports of some people receiving multiple x-rays to try and increase the chance of winning a prize. Glasgow Herald, 11 March 1957, p.6.

⁸⁸ It was reported that people had waited for up to three hours to be x-rayed at Mossbank after the apparatus there had developed a fault. The average time taken between joining a queue elsewhere and being x-rayed was 15-20 minutes. Glasgow Herald, 14 March 1957, p.9.

year following the campaign was not as dramatic as was hoped for.

Fig.5 (iii)
Respiratory Tuberculosis Notifications, Before, During and After the Scottish National Mass Radiography Campaign

	<u>Glasgow</u>	<u>Edinburgh</u>	<u>Aberdeen</u>
Before	188	90	124
During	364	148	171
After	124	59	53

In future mass radiography was to be used on target groups who would be offered the service annually. Such groups included nurses, contacts, school teachers, barmen, doctors, dentists, prison inmates and persons in asylums. In addition, mobile units were used to 'clear-up' areas which experienced marked increases in incidence.⁸⁹

The response to the campaign was indicative of the marked change in attitudes towards tuberculosis. Chemotherapy revolutionised not only the treatment of the disease but also the public's perception of it. The disease was not feared to the great extent that it once was. The next chapter will deal in part with the public's attitude to tuberculosis, and specifically with the public's attitude as seen by the sufferers themselves.

⁸⁹ Crofton, 'Tuberculosis Undefeated', B.M.J., 3 September 1960, op.cit., p.680.

CHAPTER SIX

THE VICTIMS - AN ORAL HISTORY

(1) INTRODUCTION.

It has been claimed that more has been written about the tubercle bacillus than about any other living organism except man himself.¹ By ignoring Pope's dictum and concentrating on the bacillus, the patient has been largely neglected by the authors of the medical textbooks on tuberculosis. Linda Bryder's recent research using the unique follow-up records maintained by the Frimley Sanatorium has been a welcome antidote, helping to redress the balance in favour of the patient.² This chapter, based largely on the personal reminiscences of ex-tuberculosis patients, shall attempt to reconstruct the reality of the disease as experienced by its victims.

In this country tuberculosis is now an almost forgotten disease. Yet there can scarcely be a member of the generations born before the 1950's who did not have a friend, relative or neighbour who either suffered or died from tuberculosis. In order to tap this source of experience, an advertisement was printed in the Daily Record appealing for former patients and nurses to get in touch. This appeal elicited forty-two replies; thirty-four from ex-patients, eight from ex-nurses. Oral history is, however, a very time-consuming exercise, even for a full-time research student. It was decided, therefore, to visit all the ex-nurses and as many ex-patients as possible, the remainder

1 F.R.G. Heaf (ed), A Symposium on Tuberculosis op cit. p.3.

2 Bryder, Mountain. op cit. pp. 199-226.

being sent questionnaires. In the event, eighteen interviews were conducted and twenty-one ex-patients returned the questionnaire. The sample was now reduced to thirty ex-patients and eight ex-nurses. For anonymity, the patients are listed A-Z4 in the text, the nurses A-G.³

Twenty-two of the patients suffered from respiratory tuberculosis, the remainder from surgical tuberculosis. In addition one of the ex-nurses contracted respiratory tuberculosis during training. Some respiratory cases also had lesions elsewhere and vice versa. Thus, three respiratory cases developed renal tuberculosis, two spinal, one of the sternum and one glandular.

The earliest case was recorded in 1928, the latest in 1953. The length of institutional treatment undertaken ranged from three months to nine years. The patients had experience of a great variety of institutions. The majority, twelve, were treated in Robroyston. Five had been in Ruchill and three in Mearnskirck. Several patients were treated in as many as three institutions. Respondents also had experience of Hairmyres, Bridge of Earn, Southfield, Lanfine, Bellefield, Law, Tor-Na-Dee, Stobhill, Whitehills and Norranside. (see Fig.6).

³ A female patient who recorded her experiences of Southfield Sanatorium during the Second War has been included in the sample. Permission to quote from the diary was obtained from Sir John Crofton who originally lent the diary to the author. For the nurses reminiscences, see Chapter Five. For details of the methodology and questionnaire employed, see Appendix Three.

Fig. 6 The Sample

<u>PATIENT</u>	<u>SEX</u>	<u>AGE</u>	<u>DATE</u>	<u>LESION</u>	<u>HOSPITAL</u>	<u>DURATION</u>
A	F	4	1948	spine	M/kirk	2.5 yrs
B	F	20	1940	lung	Various	2 years
C	F	16	1947	lung	Bellefield	2 years
D	F	19	1944	lung	Robroyston	9 mths
E	F	18	1947	lung	Robroyston	2 years
F	F	24	1943	lung	Law	1 year
G	F	18	1946	spine	Bangour	2.5 yrs
H	F	14	1939	abdomen	M/kirk	1.5 yrs
I	M	16	1933	spine	Robroyston	20 mths
J	M	19	1944	spine	Robroyston	4 years
K	F	21	1928	lung	Various	3 years
L	F	30	1953	lung	Norranside	18 mths
M	M	36	1950	lung	Robroyston	10 mths
N	F	17	1951	spine	Ireland	3 years
O	F	17	1946	lung	Robroyston	2 years
P	F	23	1943	lung	Ruchill	1 year
Q	F	19	1949	lung	Ruchill	9 mths
R	F	11	1931	spine	M/kirk	5 years
S	M	6	1925	chest	Ruchill	3 years
T	M	10	1944	hip	Robroyston	20 mths
U	M	24	1949	lung	Hairmyres	4 years
V	M	18	1942	lung	Ruchill	3 mths
W	M	16	1939	lung	Various	18 mths
X	M	8	1931	spine	M/kirk	9 yrs
Y	F	19	1944	lung	LennoxCastle	3 mths
Z	F	18	1949	lung	Robroyston	1 year
Z1	F	18	1947	lung	Hairmyres	2.5 yrs
Z2	M	23	1949	lung	Norranside	18 mths
Z3	F	17	1942	lung	Ruchill	8 years
Z4	F	25	1941	lung	Southfield	9 mths

There are many drawbacks to this kind of oral history and the uses that can be made of it, therefore, are somewhat limited. The most obvious drawback is that the sample is fairly small. Nevertheless, although it cannot be claimed that this is the definitive account of all ex-tuberculosis patients from the Glasgow area, even amongst this small sample common strands of experience emerged. It must also be remembered that prior to chemotherapy almost eighty per cent of notified cases died. Few, therefore, survived to tell their tale.

Another obvious handicap is memory. One respondent was trying to recall events that occurred sixty years ago, the

majority were going back forty years. Most, however, claimed that they could remember their treatment vividly as it was a very traumatic period in their lives. Another drawback is that those who wish to talk about their experiences may not constitute a representative sample. The very fact they survived at all marks them off from the majority. Their reasons for answering the appeal must also be kept in mind. Some, for example, may have wished to express gratitude for the treatment they received. Others may have had an axe to grind concerning the paucity of treatment. It is impossible to allow for this sort of bias, all that can be said is that the interviewer was aware of the dangers during the visits.

(2) HOME ENVIRONMENT AND DIAGNOSIS.

Six of the thirty respondents claimed categorically that there had been neither poverty nor overcrowding in their family home. Fifteen said that there had been poverty and/or overcrowding present; nine of whom came from the East-end of the city. Of the remainder, one was a country girl while nine did not furnish any information on their family background. Only one person enjoyed the bedroom to herself necessary to preclude institutional treatment.

Several harrowing family histories were retold, providing invaluable insights into the reality of overcrowding in the city. Such experiences tend to be obscured by the aggregation of impersonal statistics. Patient E, for example, was one of a family of ten living in a room and kitchen. They slept three to a bed. The father, a drunkard, was the first to contract respiratory

tuberculosis. He infected his wife who subsequently died, but not before infecting the eldest daughter. She, in turn, infected the respondent who at the age of eighteen was responsible for the entire family. The eldest sister died as, too, did a younger sister from tubercular meningitis. Patient P was aged twenty-four when she contracted respiratory tuberculosis in 1943. She had four children at the time and lived in a one-room tenement in the East-end. Her husband was in the army. Two of her children died before she was allocated a new house. Patient S came from a family of seven living in a room and kitchen in the heart of industrial Bridgeton. Of the five sons, two died from tuberculosis (the respondent, being in hospital never even knew them), while another suffered from spinal tuberculosis. Thus only one son escaped infection.

Given such a degree of multiple infection within families it is not surprising that many people believed tuberculosis to be hereditary. There was, however, no history of multiple infection or family history of the disease among those respondents who described their backgrounds as comfortable. This would suggest that overcrowding was a primary factor in accounting for the high incidences of the disease in Glasgow. This does not, however, tell the whole story.

Many of those who lived in overcrowded conditions were also very poor. Thus, patient E's father never worked. The family existed on an appalling diet of soup, cabbage and potatoes. The weekly treat was sausage and beans every Thursday. Several respondents also commented on the fact

that hospital food, almost universally reviled by patients at the time, was far superior to anything they had been used to before.

Again, however, overcrowding and poverty do not constitute a duocausal explanation for high incidences. Patient E's father took a very fatalistic view of the disease, one which he extended to encompass his family. E can only remember him ever using the home as sleeping quarters, but when there he expectorated openly onto a newspaper on the floor. This was in the same room as the family ate their meals. Precautions against further infection were dismissed by the adage that 'whit's fur y'll no go by ye.' This reluctance to duck may have been responsible for the death of his wife and two daughters.

Patient E's story provides a microcosm of the background against which the whole debate on causal factors was conducted. The official line was to stress personal responsibility through education. In the case of E's father they certainly had a point. Would he have continued to expectorate on the floor had the family been given a larger house? The answer is probably yes, although his family may have been accorded a greater degree of protection. The problem with stressing personal responsibility is that it does not account for those who will not accept it, either for themselves or for anyone else. It is, moreover, highly unlikely that most cases of multiple infection were caused by the irresponsible behaviour of a family member. The lack of protection afforded by the small, overcrowded tenements must have been a more consistent causal factor. It is

extremely difficult to take precautions when five or six people are huddled together in the same room. Many victims would, moreover, be infectious before they were ever aware of the disease.

Most pulmonary patients were diagnosed by their G.P., often after suffering from some other malady, notably pneumonia or pleurisy. None were ever told why they contracted the disease. As nurse A noted, 'nobody questioned the doctor in those days.' Patient O was rather more critical, 'doctors never explained anything to the patient. They didn't know much themselves.' Without medical explanations, patients were left to their own devices. Patient Z believed she was infected through using the lipstick of a tuberculous friend. Another patient thought that the practice of sharing cigarettes at the dancing may have been responsible. Patient F believed she contracted the disease while working at Templeton's carpet factory where coughing was endemic due to fluff irritating the throat.

Given the degree of infection amongst the interwar population of Glasgow (almost ninety per cent by age sixteen) and the chances of reinfection afforded by overcrowding, it is, perhaps, surprising that mortality rates were not even higher. It is still not known why the majority of people can live with the tubercle bacillus while some develop clinical disease. In spite of Patient F's experience, the explanation that wartime increases in incidence were the result of overwork is not borne out by the experiences of most respondents. Only patient P, who worked as a lamplighter during the war, could attribute

contracting the disease to wartime employment. In her case repeated soakings led to her contracting pleurisy and then respiratory tuberculosis.

For those suffering from the non-pulmonary form of the disease, diagnosis tended to be a long, drawn-out affair. Seven of the eight were children when they contracted the disease. Early diagnosis was extremely difficult - ailments often being ascribed to a touch of rheumatism or laziness. Patient T, who had tuberculosis of the hip, claimed that administrative or professional jealousies were responsible for a late diagnosis in his case. He remembers doctors from Mearnskirck, where he was told he did not have the disease, refusing to transfer x-ray plates to Robroyston.

As late as 1953, patient L recalls that being detected by x-ray at Govan Town Hall as suffering from respiratory tuberculosis was 'like a death sentence.' The common reaction upon being informed that they had the disease was shock then devastation. Patient Z1, aged eighteen and from a comfortable background, did not, however, even know what tuberculosis was. Patient E remembers feeling relieved when she was told she had tuberculosis as she thought it might have been one of the younger members of the family who had it. She was also grateful in as much as she would be finally relieved of the burden of looking after the family.

Patient O was diagnosed by radiography during a medical for nursing training. She remembers feeling very well at the time and not being bothered by it except that it debarred her from nursing. It was not until she contracted pleurisy that she felt ill. Patient V was 'picked up' as a contact

when his sister contracted respiratory tuberculosis. He was sent to Ruchill for four and a half months and was discharged cured. He doubts that he ever had clinical tuberculosis as he never felt ill. His sister, however, undoubtedly had it for she died.

(3) TREATMENT

The kind of treatment a patient received was very much dependent upon the date when she or he took ill. The introduction of chemotherapy completely revolutionised the treatment of tuberculosis in the late 1940's. Nineteen of the patients were treated before 1948, nine after. Methods of treatment also depended obviously on the location of the lesion.

For respiratory cases, treatment prior to 1948 consisted, for the most part, of good diet, rest and fresh air; the so called 'open-air treatment'. If this failed, the patient might undergo thoracic surgery. The simplest surgical intervention was the induction of an artificial pneumothorax. Patient Z4 described the operation as not being painful. She had to lie on her side with her arm over her head as the doctor attempted to fill the space between the pleura and the lung with air. 'I began to feel a slight sensation in the side - not exactly a stretching, but almost as though someone were pulling a thread round my lung.' Once the air was introduced she 'began to feel like a balloon'. If this failed, as it did in the above case, the only recourse was to more drastic surgery. Three of the respondents undertook a phrenic crush. This was a procedure whereby the phrenic nerve was crushed or cut, resulting in a

raising of the diaphragm. This in turn contracted the pleural cavity causing the lung to contract.⁴ The most dramatic operation was the dreaded thoracoplasty. This procedure was a throwback to the years of heroic surgery. A mutilating operation, it involved hacking about four feet of bone from the rib-cage in order to bring about a permanent collapse of the lung. Three patients survived to tell their tale of the thoracoplasty.

Patient C's case is particularly interesting as she survived the entire arsenal of tuberculosis treatment. She contracted respiratory tuberculosis in 1947 aged seventeen. She was sent to Bellefield for eighteen months where she received open-air treatment. After discharge, an artificial pneumothorax was induced in her right lung at Baird Street Clinic. In 1953 she was admitted to Robroyston to undergo a thoracoplasty of the left lung. She was discharged in 1954 and attended Belvidere as an out-patient. Her experience would have been the common pattern of the unsuccessful treatment of the disease in the 1930's and 40's; that is, a long, drawn-out battle involving ever more drastic surgery. Hers is an unusual case in that she survived. This may have been due to the fact that by the 1950's surgery could be performed in concert with chemotherapy.

It was surprising to learn that patients were still receiving sanocrysin as late as 1948. Patient K remembers it being introduced into Robroyston in 1930 and being

⁴ George Orwell also received a phrenic crush at Hairmyres where he was under the supervision of Dr. Bruce Dick. The Collected Essays op cit. Letter to G. O, Shaughnessy. 1st. Jan. 1948.

discontinued as ineffective not long after. Although sanocrysin had never been clinically tested in controlled trials, five respondents can recall being given gold injections between 1930 and 1948. It would seem that, in the absence of efficacious alternatives, doctors would try anything in a bid to be seen to be doing something. Patient Z4 recalls a girl, for whom surgery was unsuitable, 'sucking calcium a great deal'.

Patient T recalled the scepticism with which news of streptomycin was received by the patients in Robroyston. Too many miracle cures had come and gone for them to take another one seriously. Initially it seemed as if the sceptics might be right. Although it was the first drug ever to be successful against tuberculosis meningitis, streptomycin encountered many early obstacles. Difficulties with dosage, side-effects and, most seriously, drug resistance had all to be overcome. George Orwell, following a bad fortnight suffering from the secondary effects of streptomycin, described it as 'rather a case of sinking the ship to get rid of the rats.'⁵ As nurse A recalls, 'it was very much hit and miss in the beginning'. Controlled trials, a notable one being that conducted at Edinburgh under John Crofton, eventually established the drug's value. Used in conjunction with P.A.S. and later isoniazid, streptomycin was the first potent weapon against the disease. 'It was certainly a lifeline that a lot of us caught hold of and the miracle we were all hoping for.'⁶ Not everyone, however,

⁵ *ibid* Letter to J. Symons. 20th April 1948.

⁶ Patient Z3 in Ruchill.

was delighted by its introduction. An apocryphal tale circulated in Robroyston saying that the porters were threatening to quit because a large part of their bonus consisted of removing corpses to the mortuary.

Streptomycin, which had the consistency of syrup, was administered intravenously into the hip twice daily. This, in itself, was a novel departure for the nursing staff as previously the only injections given were morphine. As well as the danger of side-effects to patients, streptomycin was also hazardous to nurses. Contact with the drug could result in serious dermatitis. P.A.S. was described by all the patients who had it as the foulest tasting substance known to man. Nurse B recalled it first being introduced in a liquid form. Patients had to suck it up through a glass tube to prevent it from rotting their teeth. It eventually became available in rice-paper sachets. It seems, however, that this was no great improvement. As patient Z3 recalls,

I think at first it was in fluid form and then with rice paper. It was about nearly the size of an old penny and about a quarter of an inch thick. We were supposed to take twelve at a time about three times a day. After struggling to swallow the first one we all decided to put the lot down the toilet and I can categorically state that PAS worked wonders for the plumbing.

For those suffering from non-respiratory tuberculosis, treatment consisted of being kept immobile for long periods of time. The theory, as in respiratory tuberculosis, was that the lesion required complete rest. For those with spinal tuberculosis this could involve being strapped to a Bradford frame for anything up to nine years. Patient X was strapped to such a contraption from the age of eight until

he was sixteen. The patient was encased in plaster and strapped down by webbing. The frame was on wheels in order that the patient would not be denied the benefits of fresh-air and sunlight. A mirror was positioned above the head for horizontal vision. It was through such a mirror that the young patient witnessed the opening of Mearnskirk by the Duchess of York in 1932. Apart from having his sinuses scooped out weekly with a scalpel, rest was the only treatment available. He can remember the doctor once injecting a substance straight into his spinal lesions. The only effect was to leave him lying in agony for days. This may have been sanocrysin.

Patient J suffered from both spinal and respiratory disease. Diagnosed aged nineteen, he spent three and a half years strapped to a frame in Robroyston between 1944-7. He also received artificial pneumothorax. Even at an older age, he came to think of it as natural to be forever lying on his back. He relapsed within a year of discharge and spent a further eighteen months lying on his back at home. By then, fortunately, chemotherapy was available to hasten recovery. Patient R recalls being admitted to Mearnskirk at the age of eleven. She was first placed in an isolation ward to ensure she had neither infectious disease nor vermin. Thereafter she was strapped to a trolley for three years. Patient E was the only non-pulmonary case to receive surgery. At the age of four, she had 'two vertabrae' removed in Mearnskirk.

Patient T spent three years in Robroyston with tuberculosis of the hip and lung. His leg was plastered from toe to rib cage. The plaster, which was half an inch thick,

was put on while the patient was suspended in the air. It could take up to two days to dry. He recalls that all the spinal and hip cases had pillow baldness from constantly lying on their backs, causing the ward to seem like a monastery. All hip and spine cases experienced great difficulty in learning to walk again having spent so long in bed.

Patient Y was the only respondent who tried alternative medicine. She contracted respiratory tuberculosis in 1944 aged nineteen. Having a room to herself, she was prescribed domiciliary treatment as there was a drastic shortage of hospital beds at the time. She was told to eat plenty of eggs, milk, fruit, vegetables and fish, all of which were, of course, difficult to procure in wartime. After six months her weight had dropped to 4st 6lb. Despairing of the seeming indifference of her G.P., her mother took her to a homoeopathic doctor. Thereafter her improvement was so dramatic that she was given the all-clear after an x-ray at Govan Town Hall in 1946. She paid 10/- a month for the treatment and did not tell her G.P. for she believed that to have done so would have been to forfeit her sickness benefit.

Y's history highlights the difficulty of evaluating treatment prior to the introduction of chemotherapy. If little was known as to why some people contracted the disease while the majority escaped, even less was known as to what course the disease might take. Prognosis was treacherous. Patient T remembers that some seemingly hopeless cases recovered, while other healthy looking

patients died. The nurses, too, commented upon this phenomenon. Nurse E believed that tuberculosis was essentially a nursing problem, 'The doctors could do little. It was up to the nursing staff to infuse the patients with will power.' Nurse A, who worked in Ruchill, believed the surgeons to be 'knife-happy' and as a result, 'we killed more than we cured.'

There is some evidence to suggest that patients were pressurised into agreeing to surgery. Patient W was told that if he did not agree to an artificial pneumothorax then he would not qualify for the Tuberculosis Allowance. Patient T recalls that a fellow patient was told 'a thoracoplasty or out'. Patients were not merely passive recipients of medical treatment. Some did express gratitude, believing that the treatment they had received saved their lives. Patient Z2 believed she survived because she conscientiously stuck to the doctors' orders. She recalls that most girls died after being discharged from hospital because 'they did not obey the rules of resting. They would go to the dancing, drink and smoke.' She concedes that this may have been because, 'I had a better standard of home life.' Others were more cynical. Thus patient O, 'Tuberculosis had as much chance getting better itself than with treatment they had at that time.' (1946). Patient X believes that, 'If I had done what they ordered, I wouldn't be here today.' Patient W signed himself out of Robroyston as he thought he was making little progress. He had been subjected to a course of gold injections which had very disagreeable side-effects. He also

believed that the doctors were too ready in reaching for the scalpel.

The truth of the matter will probably never be known. Surgeons could point to those who benefited from artificial pneumothorax and phrenic crushes or who survived thoracoplasty and claim that had it not been for their intervention they would have died. Critics would claim that they may have recovered anyway and that surgery often left patients maimed but with no discernible improvement. Artificial pneumothorax, too, was not without its risks. Patient Z2 almost died as a result of a failed pneumothorax. Patient Z4 also nearly died during an operation to induce a phrenic crush, although in her case the complications were caused by a severe allergy to novacocaine in large doses. As was seen in Chapter Three, the period of widespread surgical treatment of respiratory tuberculosis witnessed no decline in the ratio of deaths to notifications. The decline in the 1940's can be wholly attributed to the rise in notifications. In 1956 W.C. Fowler, a leading thoracic surgeon, summarised three decades of tuberculosis surgery thus,

Let us be grateful to all those human guinea pigs by whose suffering and fortitude hope was kept alive which enabled our surgeons and biochemists to step up a ladder runged with blood and sweat and tears.....(patients) bereft of many ribs, of phrenic nerves and transverse processes, padding⁷ out their vests to hide their scoliotic figures.

⁷ Quoted in Smith, Retreat op cit. p.147.

(4) INSTITUTIONAL LIFE

The respondents' recollections of life as long-term patients are as varied as their ages, personalities, backgrounds and experience. Much also depended on the institution. Thus, for patient C, eighteen months in Bellefield was, 'like a holiday in the country.' Robroyston, on the other hand, according to patient D, a girl of similar age and background, was, 'awful...every week some young girl died and we heard this noisy barrow coming for the body.' Veterans with multi-institutional experience were well aware of these differences. Patient B considered Ruchill to be, 'like a prison...we were not even allowed to sing.' Robroyston, in contrast, was 'more like a holiday home.' In this case time, too, would have been a varying factor. B was a patient in Ruchill during the blitz when, 'we spent more time under the beds than in them.', whereas she was admitted to Robroyston in 1950. Chemotherapy not only revolutionised treatment, it also transformed the whole character of the tuberculosis institutions. Hope had entered the hospices. Nurse A was very conscious of this transformation. She began her training in Ruchill in 1938 when conditions were, 'strict, regimented and highly disciplined', although much depended upon who was in charge of the individual wards.⁸ Returning to the hospital in 1950, she found conditions much more relaxed with the patients being left to their own devices for much of the time. The advent of chemotherapy

⁸ Patient Z3 recalls a marked change in atmosphere amongst both patients and staff in her ward in Ruchill following the retirement of a seventy-two year old sister who was feared and hated by all.

would not have been the only factor influencing this lightening-up process. The creation of the NHS and the general mood of post-war liberalisation were also likely to have played a part.

In general, the proper sanatoria were less strict and more open than the tuberculosis hospitals. Thus Hairmyres, Ochill Hills and Bellefield were preferable to the tuberculosis factories at Robroyston and Ruchill. This was partly due to the practice of sending 'early', tractable cases to the sanatoria and the rest to hospitals, although, as has been noted, such separation was not always possible due to the dearth of 'early' cases. Hairmyres was something of an exception, being part sanatorium, part hospital. Mearns Kirk, as a children's hospital, also had a unique character of its own.

Whether in hospital or sanatorium, all respondents had memories of 'open-air' treatment. The most common recollection is of being constantly cold in the winter. Patients wore woollen hats, gloves, jumpers and bed-socks to combat the Scottish climate. Their beds contained 'china-pig', hot-water bottles which demanded constant refilling. A tarpaulin was stretched over the bed in the event of rain or snow.⁹ Patient F recalls knitting with gloves on. Patient R had chilblains on every finger, upon complaining she was advised to rub snow onto them. 'Open-air' treatment also had its hazards in summer. Patient X was smeared with coconut

⁹ This treatment, too, was not without its hazards. In 1936 Glasgow's MOH reported on a patient 'who had met with an accident through slipping on the frost-bound verandahs of one of the pavilions'. GCHC Minutes Feb. 1936. S.R.A. C1/3/94.

oil in order to better soak up the sun before being wheeled out into the fields around Mearnskirck. The oil, unfortunately, acted as a magnet for every wasp in the vicinity. Strapped to a Bradford frame with fourteen suppurating sinuses, this must have seemed like a very refined form of torture to the young patient concerned. 'Open-air' treatment could, however, have its more exciting distractions. Patient W witnessed one of the earliest aerial battles of World War Two over the Forth Bridge from a vantage point high on the Ochil Hills.

Death was also common to all institutions, although greater in some than others. However much patients tried to shut it out, it could not be ignored. Patient B remembers there being no side wards for the terminally ill in Ruchill and as a result she witnessed many deaths. As a twenty-year-old mother of two, she spent much of the time in great fear. Patient T recalls that only three of the ten patients in his section of a ward in Robroyston survived. Gallows humour was used as a defence against melancholy. Thus the trolley for the dead was known as the 'pan-loaf', while its arrival was greeted with the observation that, 'that's another one cured.'

I always seemed to be next to someone that died and it was always through the night. I can still hear the sound of it as it rumbled its way towards the ward breaking the silence of the night. Then the porter would come in and carry the dead girl out in his arms. It was quite depressing.¹⁰

Old hands could tell when a patient was going to die; he would be given an injection of morphine. Patient P spent her

¹⁰ Patient Z3 in Ruchill.

post-operative recovery from a thoracoplasty, biting her blankets in agony rather than accept morphine, so associated was it with death.

Somerset Maugham captured the mood following a death in an institution in his short story, The Sanatorium, based on his experiences as a patient in a private sanatorium in the north of Scotland.

For a day or two (after the boy's death) there was the same malaise in the sanatorium as there is in a prison when a man has been hanged; and then, as though by universal consent, in an obedience to an instinct of self-preservation, the boy was put out of mind: life, with its three meals a day, its golf on the miniature course, its regulated exercise, its prescribed rests, its quarrels and jealousies, its scandal-mongering and petty vexations, went on as before.¹¹

Another common feature was institutionalisation, for both patients and staff. Tuberculosis hospitals and sanatoria were either situated on the outskirts of the city or out in the country. There was thus also a physical separation from the outside world. This made visiting arduous. Robroyston was a notoriously difficult hospital to reach, although special buses were eventually organised for the many visitors from the east end of Glasgow.¹² Patient X recalls his parents having to walk the four miles from Clarkston Toll to Mearnskirck in the early days of the institution. Patient C's brother used to cycle out to Bellefield, near Lanark, once a week. Patient F's husband

¹¹ W. S. Maugham, Collected Short Stories Vol. Two. (1951). Patients in municipal hospitals did not, of course, have access to such distractions as golf courses, but the experience following a death must have been common.

¹² In 1926 the female staff at the hospital organised a petition calling on the Corporation to lay on public transport to the hospital. Such neglect of patients' non-medical welfare was fairly typical.

needed to take three buses in order to visit his wife in Law hospital from their home in Scotstoun. Families with members in separate institutions must have faced even tougher journeys. Patient L discharged herself from Norranside as the distance prevented regular visits from her family. She also turned down an opportunity of being transferred to a sanatorium in Switzerland as, 'it seemed like the other side of the world to me.'

Prior to the War, the strict regimentation in the hospitals must, indeed, have made them resemble prisons. Even the nurses commented upon this. At Robroyston, a white line was painted across the road at the gate, beyond which patients dare not venture. There were also the petty rules and regulations common to all 'closed' institutions. Sanatorium superintendents wielded a great deal of power over their charges.

Imagine the reaction today to a decision that a man, lying in a plaster case with spinal tuberculosis, who made a complaint about the food served to him, would be sent home by ambulance that very afternoon. Discipline was stern in many instances but, remarkably, it seemed to work. I was to learn later the art of being - not just a doctor - but the leader of a community or Provost of a small village.¹³

Patient Z4 recalls losing a battle of wills against an Irish matron at Southfield.

¹³ Murray, Life Worth Living op cit. p.19. Varrier-Jones, it seems, played a similar role at Papworth Village Settlement. See, Bryder, 'Papworth' Medical History 1984. op cit.

I once had half a sausage offered along with the usual bread and tea when my husband was visiting. He was shocked, and had to be stopped from seeking out matron there and then to complain. But what would have been the use? By this time I was pretty ill. I couldn't argue without raising a temperature. Matron's power in the house was supreme, and I could no longer bear the thought of having to cope with that masterful person every day, with the advantage found or contrived on her side at every opportunity. I was beginning to learn to be a victim.

Patients were often not allowed even to enter other wards.

As a youngster in Robroyston, Patient T was used as the 'bookie's' runner as nobody minded his going from ward to ward. Like prisoners, patients would often 'go over' or 'dleep the wall.' They would go for a walk to a cafe, to a pub or the fish and chip shop and then sneak back in.

Another method of protest was the hunger strike. Patient W organised one in Bridge of Earn as a protest against the monotony of both the food and the regime.¹⁴ Patient E remembers a hunger strike in Robroyston being broken by a threat to charge the participants with murder. Such diversions not only broke the monotony, but they also served as a means of asserting independence against an authoritarian regime.

Nurse A recalls the patients as being very cliquish, both the men and the women. Nurse F remembers one particular ward in Robroyston where an infamous Glasgow gangster kept order. Long-term patients were often treated as 'trusties' and would be given chores to do. Indeed, many helped run the

¹⁴ Bridge of Earn was the source of a great number of complaints. In 1945 Glasgow Corporation complained to the Secretary of State for Scotland about the treatment of patients from the city who had been sent there. One grievance was that patients requiring dentures did not have them supplied. G.C.H.C. Minutes. 15th April 1945. S.R.A. C1/3/111.

wards as they knew as much as the nurses. Patient Z3 had a rather specialised task,

I looked after patients who were, I think you would call them upper middle class. They were like fish out of water and hadn't a clue as to how to take care of themselves and it was my job to guide them. One of those patients had just come home from Kenya or somewhere out there with her husband and she was great. She used to tell us about big game hunting, but her disease was well advanced and she wasn't with us very long.

Nurse A claimed that trustie patients were often reluctant to leave the hospital and that there were cases where some were given employment. Patient T recalls the tuberculosis patients as a 'brotherhood'. An old-boys network was maintained through the Tuberculosis Dispensaries. This generally was used as means of establishing who was still alive.

The nurses, too, were very much confined to the limited world of the institution. Before 1950, all nurses had to live-in. They were given only one day off a month and were allowed out only one evening per week. Little wonder, therefore, that so many of them ended up marrying ex-patients.

Hairmyres, which was controlled by the Lanarkshire County Council, had some of the features of the famous Papworth Colony pioneered by Varrier-Jones at Cambridge. The regime was much more relaxed than at the Glasgow hospitals, even before the War. Nurse D remembers it as 'a very happy place', while patient Z1 recalls there being 'plenty of laughter.' Orwell described it as 'a nice hospital', where 'everyone was very kind', although he did object to the 'harrowing' experience of being dragged into a Christmas

party.¹⁵ Patient V thought that it was not at all strict. He was the hospital bookie and nobody minded his doing the rounds and going into town to place the bets. He also remembers being given leave to attend all the big matches at Hampden. Hairmyres also offered genuine occupational therapy, although only for the lucky few. As well as the ubiquitous basket weaving, patients could train as upholsterers, drivers, mechanics, clerks and dispensers. The hospital also had its own market garden and poultry farm which ensured a ready supply of eggs and fresh vegetables, the recommended staple diet of consumptives. Like Law and Mearns Kirk, Hairmyres was expanded for use as a military hospital under the Emergency Hospital Scheme.

Patient H, aged fourteen, remembers the patients and staff at Mearns Kirk as being 'like one big happy family' and was homesick when she was discharged. Patient A recalled the trauma of returning to life in a slum after spending two and a half years in the country at Mearns Kirk. Patient R, on the other hand, thought the regime was very strict and remembers the highland nurses as being particularly severe. X, who was in for nine years, thought the discipline was very hard. He remembers being slapped on the face by a doctor for being

¹⁵ The Collected Essays. op cit. Letters to C. Kirwan. 20th Jan. 1948 and G. O'Shaughnessy 1st Jan. 1948. Interestingly, Orwell had a chance to compare public and private sanatoria. When he was discharged from Hairmyres he went to the Isle of Jura where he completed 1984. He relapsed not long after, but could not gain admittance to a Scottish sanatorium as they were all full at this time. He was, therefore, compelled to enter a private sanatorium in the Cotswolds. 'One cannot help feeling the difference in the texture of life when one is paying one's own keep. The most noticeable difference here is that it is much quieter than the hospital, that everything is done in a more leisurely way.' Letter to G. O'Shaughnessy. 21st March 1949.

cheeky. At the age of sixteen he was sent to the infants' ward for nine months as a punishment.

The childrens' memories of hospital life would obviously have been coloured by their childhood experience. One thing they all had in common, however, was a lack of formal schooling. X never went to school at all, receiving only an hour or so of teaching at his bedside every week. Patient S, admitted to Ruchill aged six with tuberculosis of the sternum, was placed in a female ward. He recalls being taught by the women in the ward. Patient T, in Robroyston aged ten, received an 'alternative education' through listening to the endless political, religious and philosophical arguments of the older men. Patient R, who was admitted to Mearns Kirk as an eleven year old, also received no formal education. Neither did she receive the 'informal' education of her peers. Discharged aged sixteen, she still had the naive perspective of the outside world of an eleven year old.

Hospital food was another common memory of most respondents. The majority of them were in hospital either during the War or during the postwar years of rationing. As diet was one of the principal methods of treatment prior to chemotherapy, much attention was given, in theory, to what the patients ate. Patients were given cod-liver oil, malts and bottles of stout to build them up. They were also given yeast and syrup to improve their appetites. Nurse D recalls that respiratory patients were very finicky eaters and had an aversion to greens. Patient Z4, from a middle class back-

ground, was particularly scathing of the wartime fare served up at Southfield. Of her first meal, she wrote;

I picked up my soup spoon, like the old spoons we used to keep in the kitchen drawer, but here it was thick with grease, said 'Ugh' and wiped it on a clean hankie. I forget what the soup tasted like, but it was followed by a wet plateful that called itself pie, with sprouts washing about in water. The grande finale was a milk pudding, bright yellow, a mixture of sago and something else, which called itself Eiffel Tower. What relationship they had to each other I can't think, unless it were a sensation of nausea at the completion of either.

Although some respondents claimed the food was bad, most agreed with nurse B's recollection that the food was 'plentiful, but monotonous.' Patients would know months in advance what they would be eating on any particular day. As a result, visitors were relied upon to bring extras. Patient K recalls that the food in Bellefield in the early 1930's was, 'nothing great. We got a chop once a month,' and that visitors brought, 'a nice tasty bite for our meals.' Nurse A thought that the food in Ruchill before the War was terrible, for both patients and nurses. She remembers being constantly hungry and, although expressly forbidden to eat the patients' food, she often did. Patient Q, on the other hand, thought that the food in Ruchill was 'very fattening', although this was after the War. Patient E brought a fresh insight to the complaints about food. Coming from a poor family, she thought the food better than anything she had eaten before. She believed that most of the other patients were the same and, although they complained about the food, this was only because they were too proud to admit it was superior to what they were used to.

Twelve of the patients and seven of the nurses experienced the postwar crisis of tuberculosis bed availability. Thus Patient Z1, a Glasgow man, was sent as far away as Strathcatro in Brechin in order to secure a bed. Patient L was sent to Whitehills in Dundee and then to Norranside in Aberdeenshire. Nurse B recalled that in 1946 the beds in Robroyston were only eighteen inches apart. There were even beds in the corridors. The pressure on beds was relieved somewhat by an outbreak of dysentery in 1946 which nurse B claimed killed over a hundred patients and several members of staff. Patient Z3 was also in Robroyston at this time and remembers it as a 'nightmare, half our ward had it.' Patient D commented on the large number of families in Robroyston who were split up among the various wards. Patient V also remembers Hairmyres as being, 'packed to the gunwales.' in 1946.

One outcome of the bed and nursing shortage was that patients were often encouraged to 'do for themselves.' Patient Z recalled having to work for a bed in Robroyston. Patient T used to lie in his bed and roll bandages and dressings. Patient R, in Mearnskirck, remembers sewing bed linen 'like convicts.' Others recall fellow patients cleaning, polishing, making beds, doing tea rounds and even dispensing. Law Hospital pioneered a scheme whereby ambulant patients were left to their own devices. Glasgow Corporation implemented a scheme in 1947 designed to allow the available nurses to concentrate on more acute cases. As was seen in Chapter Five, nurses were withdrawn altogether from some wards at Law Junction. This 'do-it-yourself'

approach to patient care could be defended on the grounds that it was providing occupational therapy of sorts.¹⁶

Long-term patients passed their time living in hope from one x-ray to the next, usually at monthly intervals. Mann describes this method of marking time very well in The Magic Mountain. This phenomenon probably accounts for the notion that tuberculosis patients were particularly moody. The ex-nurses all commented on this tendency to temperamentality. Hopes would be constantly raised or dashed depending on the results of blood counts, temperature and radiography. In Robroyston patients had another benchmark against which to measure progress. Ambulant patients who were improving were sent to the huts 'up the gangway' on the hill. When sent there patients knew that they would soon be discharged.

Nurse F, who himself contracted respiratory tuberculosis, remembers Robroyston as boring and the patients being characterised by lassitude and malaise. Patient W also thought that life in Robroyston was 'routine, soul-destroying and boring.' Patient Z2 was informed by his fellow patients upon admission that, 'the first two years are the worst.' Patient O, in contrast, remembers that 'life wasn't at all sad in Robroyston.' Her ward, full of teenage girls, was, 'cheery, we never discussed tuberculosis.' She

16 Echoing Marcus Paterson's earlier theories of work therapy, self-nursing was held to be 'part of the hardening phase of treatment which enables the patient to leave hospital in a much fitter mental and physical state than was often the case in the past'. MOH Report Glasgow. 1947. p.102. In the British empirical tradition theories could always be found to justify circumstances, no matter how critical.

recalls having bean feasts after lights out with the food brought by visitors and then playing slides on the floor. Patient I also claimed that patient morale was very good in Robroyston. These contrasting perspectives of life in the same hospital during the same period may owe much to the ability some people have in adapting to institutional life while others cannot.

Patients passed the time in the classic manner as in most institutions. They read, they knitted, they sewed, they had their hobbies and they gambled. In Robroyston, radios, gramophones, pianos, a putting green, a bowling green, a snooker hall and a concert hall were all available for recreation. Hairmyres could boast a tennis court and, in winter, a skating pond. The hospital was also surrounded by ideal walking country. Several thriving businesses, apart from the bookmakers, were conducted from hospital. In Robroyston patients made jewellery from wire and beads. The War and postwar years provided a demand for these items and those who were adept at making them could earn more than the nurses. For those less entrepreneurially inclined, the periodic culls of the armies of tuberculous cats, together with efforts to protect particular favourites, provided diversion. For others there was the oldest pastime of all, sex.

It was commonly believed that the victims of respiratory tuberculosis were particularly amorous and oversexed. Patient E's future mother and sister-in-law tried to end her relationship with her fiance who had tuberculosis of the hip because, 'they thought I would want him in bed

for sex all day long.' This notion may have owed something to the nineteenth century's romantic image of consumption. Nurses and patients also commented on the attractive features of respiratory cases, characterised by sunken cheeks, flushes and sparkling eyes. In A Psychiatrist Looks at Tuberculosis, Eric Wittkower identified, 'an inordinate need for affection' as the most common feature of tuberculosis patients. This was, however, probably due to the fact that the tuberculous felt ostracised. The myth of the oversexed tuberculosis patient probably arose from the age structure of the hospital inmates. When hundreds of people mostly aged between eighteen and thirty are shut away from the rest of society with very little to think of but their illness, it is hardly surprising that their thoughts should turn to the opposite sex. As liaison between the sexes was frowned upon, Nurse E was a member of the Robroyston weekend 'durex patrol', there was also an element of daring attached to the encounters. In an institution where death was ever present there must also have been a sense of carpe diem involved.¹⁷ Patient W succinctly dismissed the myth thus,

If the disease makes people oversexed, then there must be an awful lot of tuberculosis out there.

¹⁷ In Maugham's short story, The Sanatorium, the young female character, Miss Bishop, falls in love with Major George Templeton, an ex-Guards officer, 'rake and libertine'. Upon asking the superintendent's advice as to their chances should they marry, Miss Bishop is told that, although her disease is quiescent, if she leaves the sanatorium there is a good chance that it will recur. Templeton is informed that his is a hopeless case and that if he stays in the sanatorium, he might live for another two years, but if he marries, he will be dead in six months. They decide to go ahead and marry.

(5) POST-INSTITUTIONAL LIFE

In her recent book, Below the Magic Mountain, Linda Bryder analysed the follow-up records of patients who had been in Frimley Sanatorium. Her conclusion was that victims of tuberculosis felt ostracised and were treated like lepers. This was very much the experience of most of the respondents in Glasgow. There were two aspects to the stigma which attached to tuberculosis. The disease was associated with poverty and it was infectious.

Fear of contracting the disease was probably the most powerful factor in society shunning the victims of the disease. Thus nobody called to help patient E when she was nursing her tuberculous sister and looking after a large family. She also remembers that none of her many friends visited when she was in hospital. When out visiting after discharge she was never offered a cup of tea in anyone's home. She also claims that she was 'never asked out by the boys when she came out of hospital.' The fact that she eventually married a fellow victim of the disease is, perhaps, revealing. Patients N and Z2 were also married to each other and met after they had contracted the disease. Patient Z4 was introduced to her husband, another victim of the disease, by a friend she had met in Ruchill. If the tuberculous were shunned and tended to draw together, then it is hardly surprising that people thought that it ran in families.

Patient H was also well aware of the stigma. Her best friend did not visit her in hospital and crossed the road to

avoid her when she was discharged. Patient B recalls that when visiting she would be given an old cup which would then be 'accidentally broken.' She claimed that this was a common occurrence and that it had happened to other fellow sufferers. Patient W felt ostracised by the local community which gave him an inferiority complex.

As a result of this ostracism, patients rarely advertised their condition. Patient A's mother was 'terrified' when she learned that her four year old daughter had tuberculosis of the spine, partly because she believed people might think that she had neglected her. People outside the immediate family were, therefore, told that she had damaged her back falling from a swing. Patient T was discharged from Robroyston when there had been a outbreak of polio in the city. When asked about his crippled leg, he said that he had had polio as he considered this to be 'somehow a cleaner disease.' Patient D's mother told friends that, rather than having tuberculosis, her daughter only had 'a shadow on her lung.' Patient Y remembers that her disease was never discussed and that the whole subject was tabboo in the house. Even in hospital, patients were ashamed to admit to their condition. When patient E was first admitted to Robroyston she told the girl in the next bed that, 'she was in with the flu and that she expected to be home within two to three weeks,' whereupon she was informed, 'that they were all in with the flu and that most of them had been there two to three years.' Such evasiveness, however, could backfire. When patient Z had been courting her future husband for six months her mother told her that she had better tell him that

she had been in hospital with tuberculosis. When she told him that she had been in a sanatorium he looked at her askance but said nothing. Months passed before he asked her why she had been in a mental home!

Tuberculosis was very rarely spoken of. There were many euphemisms available to save speaking the dreaded words; the spat, white-man's cough, the trouble, the big yin and ra bug. Nurse B recalls victims being referred to as 'TB bastards' as if it was somehow their own fault. He did, however, note a change in attitudes after the War. This attitude was not confined to laymen. Two patients, C and Z, told the story of a doctor who when asked about the healthy, ruddy complexion of his patients answered, 'Ah yes, they look just like lovely rosy apples, but if you cut those apples you would find they were rotten to the core.' Patient C also recalls a particularly obnoxious doctor telling her to, 'keep your face to the front and don't breathe your tuberculous disease all over me.' Patient Z4 has less than fond memories of a female doctor at Robroyston.

We had a lady doctor. She was a menace. She was as cold as ice. If she had good news to tell a patient she delayed it for a day. One day she approached my bed with a smile on her face and I knew I was going to hear bad news. She said my kidneys had deteriorated and at the most I would only live five years. I was twenty-one years old then. The next time the consultant came I got permission to speak to him. When I told him he was furious and said it wasn't true and that he would see her. I got my revenge. I asked and got back to Ruchill.

Other ex-patients commented on the professionalism of the medical staff, including the doctors. Patient Z4

compared the medical block at Southfield to the patients' quarters in the large house thus,

As soon as I entered it I was aware of a different atmosphere. Here was efficiency and cleanliness, law and order. Here Dr. C. and his colleagues and the theatre sister were in their element. Here the matron held no sway.

Only one ex-patient was given any help in finding employment upon discharge. Patient Z1 was given 'excellent help' in rehabilitation in 1952. She was sent to a Rehabilitation Centre at Hillington where her working capacity was tested by a variety of mundane jobs. Patient W, on the other hand, was given no help and remembers lying his way into several jobs. He even managed to lie his way into the RAF, but was discharged following a medical for air-crew training. Patient C remembers that she was a long time getting a job when she left hospital and although she was supposed to have got assistance in securing 'light work', it never materialised.

Nurse B claimed she could always tell if a woman had respiratory tuberculosis because they used heavily scented soaps to cover the smell of the disease.

Apart from the stigma and the difficulty in finding work, another notable aspect of post institutional life was that many female respiratory patients were advised not to start a family. For two of the ex-patients this would have been impossible anyway as the disease had spread to the fallopian tubes. Five of the nineteen female respondents remained spinsters.

(6) SUMMARY

The respondents' recollections of their experience of the disease were as varied as the individual characters involved. There was thus neither a 'tuberculous stereotype' nor a typical tuberculosis patient. What has emerged, however, is that the patients were not, on the whole, merely passive recipients of treatment. They were mostly well aware of the implications of their condition and of the paucity of remedial measures. Although the doctors' authority was rarely challenged, it was often undermined.

The tuberculosis hospitals possessed many of the characteristics of the 'closed' institution. Being far from the city, visiting was difficult, reinforcing the feeling of isolation from the outside world. The walls, the petty rules and regulations, the trustees and the constant presence of the staff all served to create the institution's own world.

Streptomycin changed not only the management of the disease, but also the character of the tuberculosis hospitals. Gone was the austere, hopeless image of the prison camp to be replaced by that of the convalescent home. Chemotherapy also drastically accelerated patient throughput and precluded the need for keeping patients for long periods.

The exercise also very much confirms Bryder's claim that the sufferers of tuberculosis were ostracised by the community at large. The respondents remembered that they felt like lepers, even after being discharged from hospital. The disease was not, therefore, only a great killer, but it

also psychologically scarred many of those who escaped its grasp.

CONCLUSION

It has been argued that tuberculosis began to be perceived as a 'national problem' at the beginning of this century for a number of reasons. The fact that a significant part of the medical profession was confident that sanatoria could cure the disease was critical. Such assumptions underpinned the demands that if something could be done to tackle the disease then something ought to be done. Advocates of institutional treatment such as Newsholme also put forward convincing arguments that sanatoria were necessary to isolate infectious cases of the disease. Once it was accepted that tuberculosis was an infectious disease, sufferers began to be displaced from the general hospitals. The victims of the disease now only had recourse to the Poor Law institutions and charity. In Scotland, where such institutions were few in number, this necessitated the erection of new poor law infirmaries. At the same time, however, there was a shift in attitude towards the tuberculous who were now seen to be the victims of an infectious disease rather than social deviants. It soon became apparent that the Poor Laws could not cope with such a long-term infectious disease. Together with arguments that it should not treat tuberculosis, a strong case was made for taking the disease out of the ambit of the Poor Laws. This alone would explain why tuberculosis was perceived to be a problem at this time.

Before 1911 responsibility for treating the disease gradually devolved upon local authorities. Philip's

Edinburgh Scheme was held to be the ideal system for controlling and treating tuberculosis. The Scheme, however, was expensive to maintain. It was believed that national insurance, modelled on the system operated in Germany, would supply the finance. Tuberculosis received a prominent place in 1911 National Insurance Act because it was feared that the disease might drain the funds. In this respect, Bryder's contention that the desire to promote 'national efficiency' was paramount in explaining why tuberculosis was perceived to be a problem at this time is lent greater credence. However, if such was the desired outcome, the provision of sanatorium benefit was never likely to achieve it. The experiences of sanatoria such as Quarrier's at Bridge of Weir had already demonstrated the weakness of relying on such institutions. They did not work. Moreover, the ubiquitous nature of the disease made it highly unlikely that institutions could ever play a major part in reducing infection.

National Insurance was to have realised three main objectives thought necessary for the proper functioning of sanatoria; it was to encourage incipient cases to seek treatment, it was to provide the financial security to enable them to undertake long periods of treatment and it was to guarantee a reasonable standard of living once the patient was discharged. As was seen in Chapter Three, none of these criteria was ever achieved. Even if they had been, it is extremely doubtful that sanatoria would have solved the problem of tuberculosis. The tuberculosis

provisions of the National Insurance Act unfortunately locked the anti-tuberculosis campaign into a situation whereby it was almost completely dependent upon institutional treatment. Such treatment proved inefficacious and expensive.

The important question to be asked, however, is why they were allowed to swallow so much money while providing so little in return. It is not enough to state, as Smith seems to imply, that all systems are self-perpetuating. The poor laws proved that this is not so. One of the main reasons for persevering with institutional treatment was that, in the absence of a cure, there was no obvious alternative. The proponents of the system could also point to the declining death-rate and claim that the contribution of institutions was self-evident. Having invested so much money and faith in sanatoria, the state itself could not afford to question their value. It has also been argued here that the traditional guardians of public health, M.O.H.s, were emasculated by being made responsible for the control of the local authority institutions. The campaign against the disease would have been far more effective had it concentrated on improving and maintaining the resistance of the population most at risk. As such the targets should have been malnutrition and overcrowding. In the interwar years these were highly sensitive political areas. The maintenance of institutional provision, therefore, helped deflect the attack on tuberculosis away from these issues.

The perpetuation of institutional treatment was also helped by the fact that there was no clear consensus concerning which particular factors were most responsible for high incidences of the disease. Indeed, such a consensus has still to emerge. Chapter Four highlighted the extreme difficulties involved in trying to unravel the relationship between tuberculosis and the 'social complex'. For each study which purported to demonstrate that diet or overcrowding was responsible for high incidences of the disease another could be found to disprove it. Nevertheless, the arguments put forward in favour of improving the general environment were more compelling than those in defence of sanatoria. The case for improvements in living conditions may not have been conclusive, but the case against sanatoria was.

Having examined the trend in mortality in Scotland and its relationship to changes in a number of factors held to be responsible for the disease it is possible to comment on the debate concerning the reasons for general mortality decline in Scotland since 1870. The case study of Glasgow strongly suggests that McKeown was correct in positing that improvements in diet occasioned by higher real wages was the most important socio-economic factor responsible for the retreat of the disease prior to the 1920s. It has, however, been argued that McKeown has overlooked the role played by the general increase in natural resistance amongst the population. It has also been shown that theories according a critical role to poor law institutions for the demise of the disease

cannot apply in the case of Scotland. Neither could a reduction in overcrowding have been responsible for the rapid retreat of the disease before 1920. At this time Glasgow enjoyed a relatively good record with respect to the disease and yet was a grossly overcrowded city. After 1920, however, the situation changed. The retreat of the disease slowed to a halt in Glasgow and then increased dramatically after 1939. It has been argued that the deterioration in Glasgow's position was not caused by the depression as the demise of the disease continued apace in equally depressed English cities. By demonstrating the relationship between overcrowding and the abnormally high incidences of the disease amongst young women in Glasgow, it has been suggested that the city's housing tradition imposed a barrier below which mortality levels could fall no further. It has further been argued that improvements in housing elsewhere must, therefore, have helped precipitate the retreat of tuberculosis. As such Szreter's contention that the role of public health measures has been overlooked in explaining the demise of tuberculosis is more apposite to the present century.

The interruption of the decline of the disease in the interwar years supports Webster's thesis that improvements in health were not universal during this period. However, by arguing that housing rather than the depression was responsible, it is suggested that the poor health amongst populations of depressed areas is the result of long rather than short-term economic changes.

Finally, it is fitting that the last words belong to the victims of the disease. Chapter Six suggested that tuberculosis left its victims feeling ostracised from society. People saw the disease rather than the person. For sufferers, therefore, tuberculosis was far more than a serious illness. It changed their lives out of all proportion to its power to physically debilitate. It has also been shown, however, that they did not passively accept their lot and allow themselves to be shunted off to institutions. Most were all too aware of the paucity of remedial measures in such places prior to the development of effective chemotherapy. Each had their own method of maintaining their own individuality. There was no such thing as the tuberculous stereotype, only people having to live with a disease which society, itself, could not cope with.

APPENDIX ONEDiet of respiratory tuberculosis patients treated in
Stobhill PoorLaw Hospital, Nov. 1910.

6.30 a.m.	Early tea,	Bread and butter.
9.00 a.m.	Breakfast, bread	Porridge and milk, tea, and butter, and an egg when ordered.

Between breakfast and dinner any phthisical patient may have half a pint of sweet milk with bread if they ask for it, or if it is ordered by the doctor.

1.00 p.m.	Dinner - varied as follows;	
	Once a week	- Stewed meat with potatoes and vegetables and bread and pudding with milk.
	Once a week	- Pea soup with meat and potatoes and bread or tripe and potatoes.
	Once a week	- Fish with potatoes and bread, and suet pudding.
	Thrice a week	- Broth with meat and potatoes and bread.
	On Sundays	- Lentil or pea soup, rice pudding with milk, bread and cheese.
5.00 p.m.	Tea - consisting of tea, bread and butter, marmalade or jam. Twice a week cheese is given with this meal.	

During the night, sweet milk is provided for the patients.

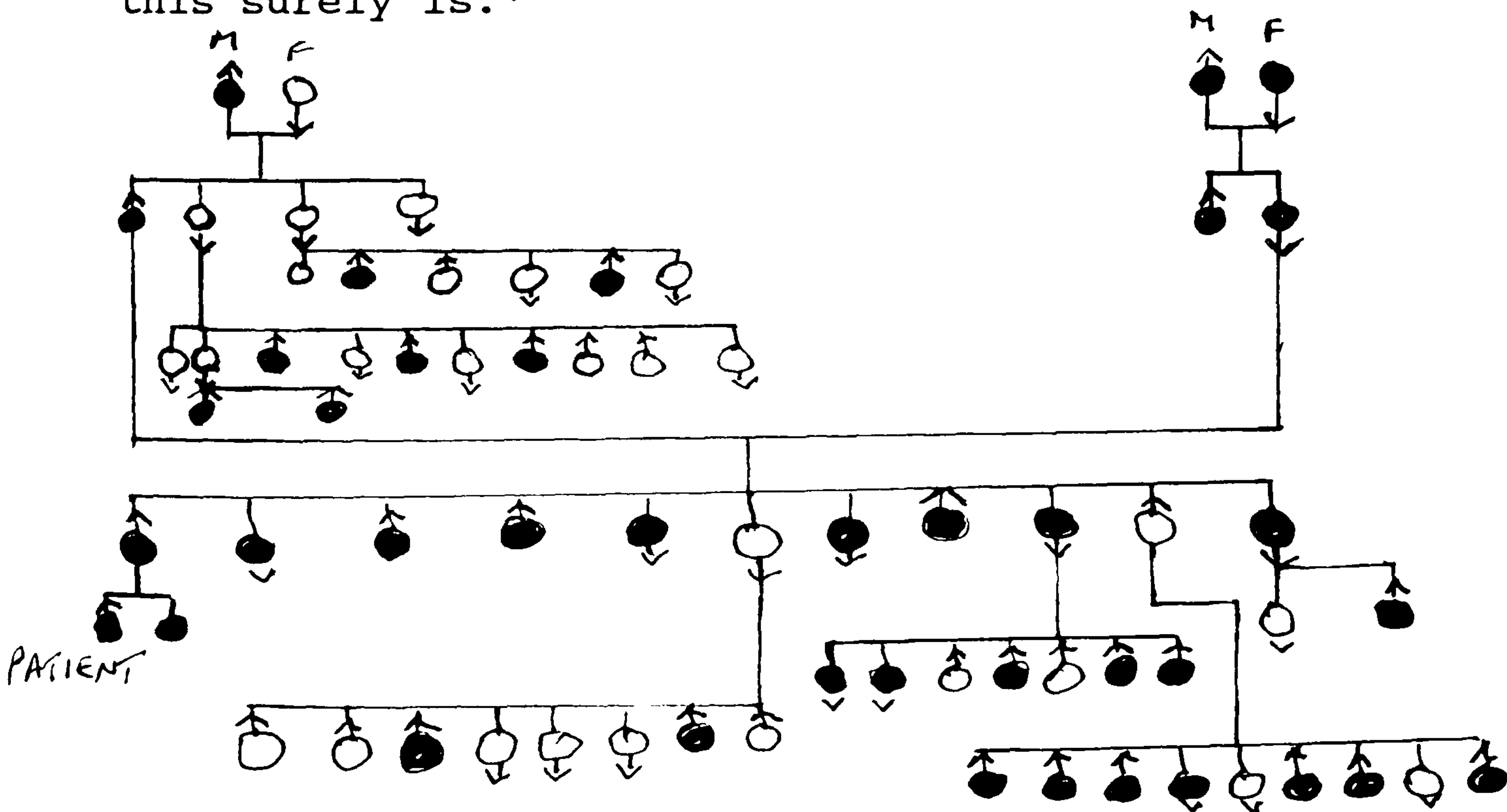
In addition to the above, the patients in the chalets or out-door shelters have raw beef sandwiches daily, and every patient is always provided with anything ordered by the doctor in charge of the case.

SOURCE : 'Reports to the L.G.B. (Scotland) on the administrative control of pulmonary phthisis in Glasgow. 1911.' S.R.A. LP/125. p.36.

APPENDIX 2

Heredity and Tuberculosis

In 1916, Dr. James Crocket, lecturer on tuberculosis at Glasgow University, cited the case of J.N., a Paisley man who was a patient at Bridge of Weir during 1914-15. The diagram shows the number of individuals in his family who died from respiratory tuberculosis within three generations. Crocket believed the deaths resulted from the union of two tuberculous cases, whose parents were also tubercular. Out of the sixty-six members of the family, thirty-nine died of respiratory tuberculosis. (the black spots). Crocket concluded, 'if anything were an argument against the marriage of consumptive persons, this surely is.'



SOURCE : J. Crocket, 'Five years in a sanatorium.' G.M.J. 1916. p.133.

APPENDIX THREE

Oral History Methodology

The interview is obviously a much more powerful tool than the questionnaire. The interviewees were most cooperative and informative. Given the different circumstances of each case, the interviews were unstructured. This had the disadvantage of making them fairly long, two to three hours being the average duration.

The questionnaire was structured around the original letter sent by the respondent. A typical example was as follows;

1. How old were you when you first contracted tuberculosis?
2. Was it respiratory tuberculosis that you suffered from?
3. Where was the disease first diagnosed and by whom?
4. Were you ever given an explanation as to why you took ill?
5. Was there any history of tuberculosis in your family?
6. Where were you living at the time?
7. Did you come from a large family.
8. How would you describe your family's economic position at the time?
9. How many of your family lived in the same house?
10. How did it feel to be told you had tuberculosis?
11. Where were you treated, when and for how long?
12. What kind of treatment did you receive?
13. Were you ever aware of any fear or social stigma attached to tuberculosis?
14. Can you recall any of the euphemisms used to describe tuberculosis, eg. 'white man's cough', 'the spat' etc?
15. Finally, I am very interested in finding out what life was like for long-term tuberculosis patients. Was it frightening, worrying, frustrating, or even just boring? How did you pass the time? What was the regimen like? If you can remember any little anecdotes concerning your time in hospital, I would be delighted to hear them. Often a patient's story can tell you more about hospital life than the medical textbooks.

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