CHAPTER 1

SANITARY REFORM & CONTROL OF THE MASSES

During the nineteenth century, consciousness about the physical environment and its effect, not only on the health but also on the welfare and stability of a society, was greatly heightened. Until the mid-nineteenth century most people living in degraded urban conditions in industrialising countries had resigned themselves to the dirt, pollution and grime as the price that had to be paid for progress.[1] A predominant attitude until this time was that disease was a punishment from God.

Edwin Chadwick and other British sanitary reformers played a large part in changing that perception. With the use of statistics and detailed surveys, yet having no commonly accepted scientific base to back up their claims, they made popular the connection between environment and health which was so important to sanitary reform. They also mapped out a series of social consequences and costs arising from unhealthy environments which alarmed the middle classes and the politicians in Britain and elsewhere. This enabled unprecedented government intervention into new areas of life previously considered matters of private or individual responsibility; in particular, water supply and domestic waste disposal.

The middle decades of the nineteenth century were therefore remarkable for the environmental consciousness which was aroused in influential people in many industrialising countries around the world. Towards the end of the nineteenth century scientific discoveries in the medical field produced a revolution in theories about disease causation and reduced the focus on the environment for disease prevention.[2] But the scene had been set, water supply and sewerage were firmly ensconced by this time as health-saving technologies.

Against this background of sanitary reform, which was imported into the British colonies, Sydney's first sewers were built and its institutions established for dealing with such matters. Decisions were made that were to shape the development of Sydney's sewerage system for years to come.

CESSPITS AND PRIVIES

By 1826 the Tank stream, which had prompted Captain Phillip to choose Port Jackson (Sydney Harbour) as the site for the first white Australian settlement, had been abandoned as a water supply because it was so fouled.[3] (The location of the Tank Stream is shown in figure 1.1) The colonial government had attempted to protect what was after all Sydney's principal water supply but had failed. In 1802 the following order, the second of its kind, was published

> If any person whatever is detected in throwing any filth into the stream of fresh water, cleaning fish, washing, erecting pigsties near it

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1 Martin Melosi, ed, Pollution and Reform in American Cities 1870-1930, University of Texas Press, 1980, p17.

2 Martin Melosi, Garbage in the Cities: Refuse, Reform and the Environment, 1880-1980, Texas A. & M. University, 1981, p80.

3 W.V.Aird, The Water Supply, Sewerage and Drainage of Sydney, M.W.S.&D.B., Sydney, 1961, pp1-3.

or taking water out of the tanks on conviction before a magistrate their home will be taken down and forfeit £5 for each offence to the Orphan Fund.[4]

Figure 1.1 The Tank Stream

Orders issued by the government, fences erected along the stream's banks and the prohibition of certain industries from the area nevertheless failed to prevent the pollution of the Tank stream.[5]

Wanton throwing of filth into the Tank stream was not the only cause of environmental and health problems in early nineteenth century Sydney, however. Domestic sewage wastes were generally disposed of into cesspits (large holes dug in the back yard). The Sydney Morning Herald published a series of articles in 1851 on "The Sanitary State of Sydney" which described open ditches, overflowing cesspools, accumulations of foetid matter, elongated quagmires, heaps of rubbish and noisome smells. At this stage the water closet was still the exception and the common privy was in general use. [6]

The problems arising from the cesspit system arose because cesspits were poorly constructed, inappropriately sited, inadequately maintained and completely unregulated. Often these cesspits were little more than "prolonged on-site excreta storage systems"[7] which polluted waterways and streets when they overflowed, bred disease-carrying insects, seeped into groundwater wells, and

4 ibid., p2.

5 F.J.J. Henry, The Water Supply and Sewerage of Sydney, Halstead Press, Sydney, 1939, p43.

6 Sydney Morning Herald, 1st March 1851.

7 N.G.Butlin, Sydney's Environmental Amenity 1970-1975, Australian National University Press, Canberra, 1976, p9.

drained into low-lying neighbourhoods where the poorest people lived, saturating the area with sewage.[8] Cesspits were described in a 1875 official report;

> In some cases, on account of imperfect construction, surface water flows into them--in others, in porous soil, water percolates into them; in both cases with every shower they fill up and overflow, contaminating the adjacent premises and gutters, and producing the most intolerable nuisance.[9]

The cesspits were emptied by private arrangement with 'night-cart' men who would often dump their load on vacant land on the borders of the city or into the water reserve surrounding the water supply or they might sell it to market gardeners.[10] The uncleaned carts would return to the city in the morning, sometimes bringing back garden produce from the market gardens, and remain in their smelly condition in the city all day.[11]

The situation worsened as water supplies were improved and water closets were introduced into the more affluent areas. The extra wastewater caused cesspits to overflow more readily and was often directed into open drains leading to the nearest watercourse such as the Tank Stream.[12]

In addition to the problems that could be directly blamed on the cesspits themselves the provision of even the most essential adjuncts to the cesspit system was also inadequate. Often one privy would serve several houses. Landlords were much criticised by the Herald which claimed that they would buy a piece of land and build fifteen or twenty 'boxes' on it, without drains, water or yard paving. Whilst there were no regulations to compel them to do anything more their tenants just had to make do since housing was in short supply.[13]

The continued growth of population in the city ensured that the situation deteriorated. Under a system of private responsibility the problem of insanitary conditions became most acute when the people who were responsible for providing for waste disposal were not those who would be affected if it was wanting. In other words, where landlords built houses for other people to live in, cesspits were ill-constructed, wells were built close to and below the level of cesspits and even where there were sewers or water pipes in the street, houses were not connected to them.

Before the incorporation of the city of Sydney in 1842, the colonial government provided a few public services, the odd drain here and there, but refrained from constructing any general system of sewers because of the expense.[14] There was pressure from various sections of the public for such a sewer system, although ratepayers were not keen to pay for it either. From as early as 1835 the

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8 ibid.; Michael Cannon, Life in the Cities: Australia in the Victorian Age:3, Currey O'Neill Ross P/L, 1983.

9 Sydney City and Suburban Sewage and Health Board, 2nd Progress Report, 1875, p4.

10 Butlin, Sydney's Environmental Amenity, p11.

11 Sydney City and Suburban Sewage and Health Board, 2nd Progress Report, 1875, p4.

12 W.V.Aird, The Water Supply, Sewerage and Drainage of Sydney, p4.

13 ibid.

14 ibid.; F.A. Bland, 'City Government by Commission', Royal Australian Historical Society 14(III), 1928, p123.

newspapers were urging the government to supply "capacious and substantial drains" [15] and by 1842 the Herald was exclaiming,

> With a mass of filth which is everyday accumulating in its reeking depositories, we have scarcely a single sewer to carry it off! [16]

PROBLEMS OF CITY GOVERNANCE AND FINANCE

An aversion on the part of the influential to paying taxes and rates has dogged the history of Sydney's sewerage system forcing those in power to adopt low cost, short term, less effective measures for dealing with sewage collection, treatment and disposal. Those who paid the most rates in the nineteenth century felt they had least to gain from public expenditure on sanitation. Those who suffered most had least say. Before incorporation of the city, the potential city ratepayers seemed willing to forego measures that would give them a degree of self-determination rather than face having to pay rates. Sanitary reform measures, as well as incorporation, were delayed on this account.[17]

In 1835 moves by a group of citizens, concerned about the state of the city, to have elected commissioners installed to oversee city improvements, met with protests from others when the governor suggested these commissioners have the powers to levy a rate.[18] According to the Herald a few years later, a "mob meeting" had been permitted "to roar down the wholesome proposition."[19]

When, finally, Sydney was about to be incorporated in 1842 a series of public meetings were held which questioned the power of a non-representative Legislative Council to create a taxing authority and demanded financial assistance from the colonial government for the provision of public services.[20]

At one such meeting it was pointed out that it would cost at least £500,000 to provide sewerage and other services to the city and that this meant that the city was being incorporated with a huge debt.[21] The need for these services was not questioned, only who should pay for it. The Herald reported of this meeting, which furnished a petition signed by over one thousand people,

> All that this meeting was assembled for, was to induce the government to tax as little as possible, and to grant to the people as much as the Government possibly could grant to enable the people to carry out those objects for which they were to be incorporated.[22]

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15 Sydney Morning Herald, 12th October 1835.

16 Sydney Morning Herald, 7th May 1842.

17 F.A. Larcombe, The Origin of Local Government in New South Wales 1831-1858, Vol. 1, Sydney University Press, 1973, pp10-21.

18 Charles Bertie, The Early History of the Sydney Municipal Council, Sydney, 1911, pp3-5.

19 Sydney Morning Herald, 7th May 1842.

20 Sydney Morning Herald, 31st May 1842.

21 Sydney Morning Herald, 7th June 1842.

22 ibid.

When the city was incorporated in 1842 one of the main tasks of the new city council was to provide a system of sewerage. The need for this was assumed by one and all with few, if any, arguments being made for the retention of an improved and better regulated cesspit system. The main point of contention seems to have been over the costs involved and who should pay them. The city was incorporated without any government endowment and in subsequent years, the city council, continually confronted by complaints and criticism because of their lack of performance, constantly petitioned the colonial government, without success, for an endowment and the assignment of various taxes which were raised in the city by way of tolls and licences.[23]

In a petition in 1847 the city councillors and aldermen estimated the cost of underground sewers would be £380,528 which they argued was quite beyond the financial resources of the council which could barely cover its own running costs. They were reluctant to raise the rates since they considered the citizens to be already highly taxed. They claimed that even if the taxes were raised to the maximum allowed by the colonial government's legislation, it would take forty years to raise the required money.[24]

A series of committees investigated the performance of the City Council from 1848 through to its dismissal in 1853. The first committee, appointed by the council itself, was at pains to prove that the Council did not have enough income to do its job properly. It claimed that it could not possibly hope to "contend against gigantic ends" with "trifling means".[25]

The committee pointed out that the council was in a different situation from that of established British cities in that it had to begin with an unformed city. The committee again claimed that rates could not be raised saying that the council was having trouble collecting them as it was. They argued that any attempt to raise the rates would be seen as "extortionate and unjust" and be met with "determined and effectual resistance"[26] This perception of the situation was confirmed with a campaign by merchants, led by Robert Campbell and David Jones, who refused to pay council rates.[27]

Although a subsequent select committee appointed by the colonial government in 1849 contended that the council had mismanaged their affairs[28] there is ample evidence that the Corporation did not have sufficient funds to provide a comprehensive sewerage system.[29] Following the two reports a few minor changes were made to the Act but the financial situation of the Corporation was substantially the same. [30]

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23 F.A.Larcombe, The Origin of Local Government in New South Wales 1831-58, Sydney University Press, 1973, p7; F.A.Bland, 'City Government by Commission', p124.

24 NSW Legislative Assembly, Votes and Proceedings, 1849, vol. 2, p110.

25 ibid.

26 ibid.

27 David Clark, 'Worse than Physic: Sydney's Water Supply 1788-1888' in Max Kelly (ed), Nineteenth-Century Sydney: Essays in Urban History, Sydney University Press, 1978, p56.

28 NSW Legislative Assembly, Votes and Proceedings, 1849, vol. 2, pp73-76.

29 Bland, 'City Government by Commission', p137.

30 ibid., pp149-150; Larcombe, The Origin of Local Government in New South Wales, p120.

In the Council elections of 1850 the Herald, which in the previous year had been aghast that sewers would not be built because of the expense,[31] called for the election of candidates who owned large amounts of property and therefore would feel the full weight of any taxation that might be imposed.[32]

Government efforts to abolish the Corporation because of its inability to provide public services were renewed in 1852 and culminated in September 1853 when it was resolved that three commissioners be appointed for a limited period.[33] Having witnessed the downfall of the Corporation, whose elected members were reluctant to spend public money, the Commissioners took the opposite course and embarked on city improvements seemingly regardless of cost. In the first five months the Commission spent twice as much as the Corporation had spent in the preceding ten years.[34]

The level of rates that the commissioners were able to levy was set by the colonial government and they soon built up a debt and came into conflict with the government. A government select committee appointed in 1854 found that "the Commissioners were injudicious in incurring so large an outlay." [35]

Each time an increase in rates had to be approved a select committee looked into the performance of the Commissioners and found fault with it. Two commentators on this period conclude that their unprecedented expenditure had made the existence of the Commissioners a "political contention"[36] and ratepayers "resented having to foot the bill, much as they admitted the necessity for the improvements."[37]

Although the Commissioners had been responsible for the construction of a whole sewerage system in just three years, the Corporation was reinstated in 1857.

THE CONNECTION BETWEEN DIRT AND DISEASE

The strong aversion that property owners had towards paying taxes provided a substantial obstacle to the implementation of sanitary reforms and it was only the reluctant agreement that they were necessary which allowed them to take place. Public health requirements provided the most obvious reason for constructing sewerage systems. Certainly public health was adversely affected by the insanitary conditions prevailing in Sydney before a general system of sewerage was implemented. In 1856 it was reported by a subcommittee of the Philosophical Society of N.S.W. that the sanitary state of Sydney was worse than that of London and that the death rate in Sydney was higher despite a year of cholera in London.[38]

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31 Sydney Morning Herald, 26th May 1849.

32 Sydney Morning Herald, 4th November 1850.

33 Bland, 'City Government by Commission', pp156-7.

34 ibid., pp160-5.

35 NSW Legislative Assembly, Votes & Proceedings, 1854, p879.

36 Larcombe, The Origin of Local Government in New South Wales, p159.

37 Bland, 'City Government by Commission', p188.

38 Asa Briggs, Victorian Cities, Penguin, 1968, p284.

The connection between disease and poor waste disposal practices was not lost on nineteenth-century Sydney residents despite their different theories of disease. The dominant disease causation theories of the nineteenth century have since been labeled "filth" theories. There was the "contagionist" view which attributed disease to a contagious agent which spread under conditions of filth.[39] The "anti-contagionist" view, on the other hand, attributed disease to the gases and putrefactive odours ("miasmas") which arose from decaying organic matter. Stagnant water, sodden ground and vitiated air were also thought to be sources of disease. Both views saw the remedy in terms of sanitary reform: cleaning up the city.

In the mid-nineteenth century, the transmission of disease had also been linked to impure drinking water after evidence had been collected by John Snow on cholera and William Budd on typhoid.[40] Although it may seem obvious today that water contaminated by faecal matter is unhealthy, the point had to be laboured and defended in Sydney in the nineteenth century.

> It may, perhaps, be the opinion of ignorant persons that the contamination of water in the manner described, however distasteful and disgusting, is not particularly dangerous to public health.... The opinion of medical men on this matter is not founded upon any theory, but is the result of observation.[41]

The Herald suggested that anything from headaches and nausea to instantaneous death could result depending on the concentration of the gases. Whilst acknowledging that there was some debate in medical circles over what caused diseases such as Cholera, Plague and Typhus it was noted that these diseases had "a strong affinity for persons that live in undrained, unwatered, overcrowded, and badly ventilated neighbourhoods."[42] A later government report reiterated

> that defective ventilation, drainage, and sewerage, and a low condition of health, a predisposition to every form of epidemic disease, and a high death rate are all intimately and closely associated as cause and effect, and follow one another in as inevitable sequence as night follows day.[43]

The report urged that an efficient system of sewerage and drainage be promptly constructed.

Had those diseases remained with such persons in their poverty stricken neighbourhoods, the pressure for sewers may not have been quite as intense. But although disease afflicted the poor more than the better off in society who could afford to build, buy and rent houses with plenty of space around them and put a bit of distance between them and the "fever beds" in the city, the epidemics were feared by everyone, regardless of class or position. It was during the panic

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39 Jon Peterson, 'The Impact of Sanitary Reform Upon American Urban Planning, 1840-1890', Journal of Social History 13, Fall 1979, pp83-103.

40 Butlin, Sydney's Environmental Amenity, p6.

41 Sydney City and Suburban Sewage and Health Board, First Progress Report, 1875, p6.

42 Sydney Morning Herald, 1st February 1851.

43 Sydney City and Suburban Sewage and Health Board, Eighth Progress Report, 1876, p3.

of 1875, for example, when "one of the most alarming crises of threatened epidemic disease faced by the city [of Sydney] throughout the century" arose, that the calls for sanitary reform were greatest.[44]

Nonetheless the push for sewers came much earlier in the nineteenth century when Sydney ratepayers were not being directly threatened by epidemic diseases and were fairly well insulated against the diseases of the poor who lived in insanitary conditions. Concern for the welfare of the poor did not typically extend to government levels since the poor had no voting power and the rhetoric of *laissez-faire* was at the height of its popularity during the mid-nineteenth century.[45] *Laissez-faire* fiscal policy was directed at minimising interference with businessmen, minimising the burden on the rich and keeping public expenditure to a minimum.[46] Australian colonial governments did not even fund hospitals because to "patch up the social fabric" was "no concern of the government".[47]

At this time, however, sweeping sanitary reforms were being made in Britain and it was the British way of doing things which predominated in Australia partly because the British had control over Australian colonies but also because many of those influential in Australia had recently immigrated from Britain and even those who had not still saw Britain as the model of progress and civilisation.

Edwin Chadwick was a key figure in the sanitary reform movement in Britain and his report on "The Sanitary Condition of the Labouring Population of Britain" in 1842 was instrumental in forcing a fuller acceptance of government responsibility for public health and sanitation in Britain. A previous report by three doctors to the 1838 Poor Law Commission had blamed squalid urban conditions for the spread of disease[48] and Chadwick, who subscribed to the anti-contagionist view of disease causation, agreed.

Chadwick's report had arisen out of the controversy over whether money spent on public health precautions saved money that would otherwise be spent on "poor relief." But in the end the economic cost of disease was only one of the points the report sought to make. It also sought to link disease to lack of sanitation and unsanitary conditions to a decline in morality. Finally it sought to change legal and administrative structures which dealt with public health matters.[49]

The British government did not act immediately on Chadwick's report and several reports later, in 1847, a Metropolitan Commission of Sewers was born and a year later the Public Health Act was passed into law which set up a

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44 A.J.C.Mayne, Fever, Squalor and Vice: Sanitation and Social Policy in Victorian Sydney, University of Queensland Press, 1982, p23.

45 E.J.Hobsbawm, Industry and Empire, Penguin, 1969, p226.

46 ibid., pp234-5.

47 Cannon, Life in the Cities, p142.

48 M.W.Flinn in introduction to Edwin Chadwick, The Sanitary Condition of the Labouring Population of Britain, 1842, edited by M.W.Flinn, Edinburgh University Press, 1965, p16.

49 ibid.

Central Board of Health and established once and for all the principle of state responsibility for public health.[50]

CONTROLLING THE MASSES - DIRT, VICE AND IMMORALITY

The sanitary reform movement in Britain took the form of a veritable moral crusade amongst elite groups and professionals "inspired by both the evangelical concept of duty and, increasingly, a new secular concern for the well-ordered society".[51] The Victorian social doctrine that social progress and morality depended on physical well-being and a pure environment was voiced by the social reformers including Chadwick,

> how much of rebellion, of moral depravity and of crime has its root in physical disorder and depravity . . . The fever nests and seats of physical depravity are also the seats of moral depravity, disorder, and crime with which the police have most to do. [52]

Such sentiments were repeated in British periodicals such as the Edinburgh Review,

> There is a most fatal and certain connexion between physical uncleanliness and moral pollution . . . Those who suffer from fever . . . become unfit for, and have a hatred of, labour . . . have a craving for the stimulus of ardent spirits. . . he is crushed by drunkenness, profligacy, and poverty, and sinks from one stage of vice and misery to another, till the intellectual faculties become dimmed, all moral and religious feeling expires, the domestic affections are destroyed, all regard for law or property is lost . . . [53]

Leading sanitary reformers in the United States held similar beliefs about the connections between insanitary conditions and immorality and crime. In New York, John Griscom and Robert Hartley were both committed to "a pietism widespread in their generation" and their campaigns were based on their observations of the "coincidence, or parallelism, of moral degradation and physical disease"[54]

These concerns found expression in Sydney where the connection between dirt and poverty was interpreted as an indication of the inferiority of the poor.[55] In a series of articles in 1851 the Herald took its readers through a chain of cause and effect from bad drainage to drunkenness, prostitution, and crime. "Vice and dirt

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50 ibid., pp70-73.

51 Anthony S.Wohl, Endangered Lives: Public Health in Victorian Britain, Harvard University Press, Cambridge, Massachusetts, 1983, p6.

52 quoted in ibid., p7.

53 W.O'Brien, 'Supply of Water to the Metropolis', Edinburgh Review 91, April 1850, pp384-7.

54 Charles Rosenberg, No Other Gods: On Science and American Thought, John Hopkins University Press, Baltimore and London, 1976, pp 109-122.

55 Sydney Morning Herald, 22nd March 1851.

are so nearly allied," the paper stated, "that the former seeks to hide itself in the repulsive mantle of the latter."[56]

Nor were such prejudices confined to the media. They were also current amongst professional circles. At an engineering association meeting in Sydney it was claimed in a paper being given by an engineer that nothing predisposed a man "to indulgence in ardent spirits" as much as "the state of bodily health and the deficiency of animal spirits, engendered by drinking impure water or breathing foul air"[57] and he asserted that this was the opinion of respected medical men.

There was an element of the sanitary reform movement that was not only concerned with morality and crime but also maintaining the social order. There was anxiety that disaffected and marginalised members of the society might be politicised and rise up and rebel. For example Christine Boyer writes of the American situation

> Although the fear of the mob and the immigrant lay just beneath the improvers' zeal, some began to say that the answers to social unrest lay in the environmental deprivations that created the ambivalent loyalties and anomalous behaviour of the poor.[58]

In Sydney the Herald argued that the "great unwashed" had no stake in the state, they became bitter and hateful and easily persuaded by "agitators" who sought to further their own political ambitions. It cited as evidence "that wild democracy under the name of Chartism" which took root in the English "dens of filth and fever".[59]

This fear re-emerged with some force twenty five years later when the alien world of city slums was laid bare to the middle-class by government reports and newspaper reports of City Council inspections. The slum dwellers seemed to be living on the fringes of society in a state of dirt, "drunkenness, debauchery, prostitution and crime". It seemed that in these slum areas all socially desirable codes of behaviour were being ignored and to those subscribing to evangelical middle class culture, non-participation in community norms of behaviour threatened the very stability of Sydney society.[60] To the middle-classes it was unbearable that the lower orders should not contribute socially, economically and morally as "useful citizens". To them Sydney's slums were "breeding a debased and self-sustaining sub-society of social and moral outcasts, existing with a minimum of healthy integration upon the fringes of mainstream community life."[61]

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56 Sydney Morning Herald, 15th March 1851.

57 Gustave Fischer, `Water Carriage System of Sewerage, Its Disadvantages, as applied to the Drainage of Cities and Towns', paper read before the Engineering Association of NSW, 1884, p3.

58 Christine Boyer, Dreaming the Rational City: The Myth of American City Planning, M.I.T. Press, Cambridge, 1983, p17; See also Charles Rosenberg, No Other Gods: On Science and American Social Thought, John Hopkins University Press, 1976.

59 Sydney Morning Herald, 8th March 1851.

60 Mayne, Fever, Squalor and Vice, pp105-6.

61 ibid., p111.

It has been argued that the desire to impose order went even deeper than this, however, and it was recognised that on a more psychological level "the control of excretory behaviour furnished the most accessible approach on a mass basis to inculcating habits of orderliness."[62] Sanitary reform was therefore linked to imposing order on the masses.

> To maintain itself a society must proclaim that things have their right places whether within the biological organism or the social. Disorder means a weakening of strength at the margins; excessive helter-skelteredness can lead to dissolution. The control of disorder means the labeling of intrusive and displaced matter as dirt. Such matter then becomes taboo...[63]

GOVERNMENT INTERVENTION VS THE IDEAL OF LAISSEZ-FAIRE

In order to achieve their discipline of the masses, sanitary reformers recognised the necessity for increased government intervention into sanitary affairs. A study of American sanitary reform noted that

> the provision of the most conducive environment, which would ensure the stability of the social order and the progress of civilization, would require constant supervision and disciplinary correction from a centralized political authority.[64]

Moreover, special authorities would be independent of political boundaries, would not be limited by the tax and debt limits imposed on local councils and would be free from municipal control.[65]

Chadwick, the leading sanitary reformer in Britain, was a firm believer in the necessity of expanding central government. His utilitarian principles led him to view such reform as being in the best interests of the manufacturers because order would be maintained amongst the poor and their productive capacity would be maximised.[66] Chadwick's report recommended the establishment of a central health board to plan water supply and sewerage disposal systems.

Such ideas ran counter to *laissez-faire* principles which were also aimed at furthering the interests of businessmen. *Laissez-faire* provided the main ideological platform from which opposition to sanitary reform could operate, particularly in Britain. It provided those whose interests were threatened by sanitary reforms a "legitimate" reason to oppose them, that was not obviously

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62 Richard Schoenwald, 'Training Urban Man: A Hypothesis about the Sanitary Movement' in H.J.Dyos and Michael Wolf (eds), The Victorian City: Images and Realities, vol. 2, Routledge & Kegan Paul, London and Boston, 1973, p675.

63 ibid., p673.

64 Boyer, Dreaming the Rational City, p14.

65 Joel A Tarr et al, 'Water and Wastes: A Retrospective Assessment of Wastewater Technology in te United States, 1800-1932', Technology and Culture 25(2), April 1984, p252.

66 James Ridgeway, The Politics of Ecology, E.P.Dutton & Co., New York, p25.

selfish and inhumane.[67] The very act of a government concerning itself with waste disposal was suspect,

> All regulations for securing cleanliness and removing filth, are apt to be considered as invasions of the privacy of the domestic hearth and the person, and amounting to an impertinent intermeddling, in matters concerning which it is insulting even to be inquisitive.[68]

In 1850 contributors to both the Edinburgh Review and the Quarterly Review defended the necessity for a degree of centralisation as implied by sanitary reform. They argued that local self-government was not being threatened by the proposal put forward by Chadwick and others to have a central health board which could plan water supply and sewage systems.

Central power, F.O. Ward argued in the Quarterly Review, would overcome the inefficiencies inherent in Local Boards which squandered the district rates by jobbing or incompetence. Such a central state authority would be above local rivalries and yet be able to step in occasionally to remedy disorders caused by the misconduct of a local power. An economic division of labour in constructing sewerage or water schemes could be facilitated and the competence of work ensured. There was a tendency amongst local councils, the magazine argued, for work to be given on the basis of favours rather than skill and for "the owners of ill-conditioned tenements to take local office, expressly to defeat measures within whose scope their own neglected property would fall." [69]

> Political Centralization is abhorrent to a free people, who see in it the mere substitution of the will of the few for the will of the many; while Sanitary consolidation becomes more popular the better it is understood, because it replaces all arbitrary will whatsoever (whether that of the many themselves, or of the few), by Natural Law . . . [70]

W.O'Brien, an engineer, pointed out in The Edinburgh Review that the private provision of water had been inequitable and inadequate

> The conclusion is inevitable, -a different principle must be adopted: if there must be a monopoly, and no doubt there must, let it be placed in the hands of the Government, or some public body responsible to the consumers. [71]

Total responsibility for water supply, the magazine argued should be put in the hands of a single Board appointed by the Government. They were opposed to the election of Board members because then members might owe their election to their political bias or activity in canvassing and in this way "private interest and political combinations" might interfere with the public good.

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67 Flinn, The Sanitary Condition of the Labouring Population of Britain, pp31, 42.

68 J.Hill Burton, 'Sanitary Reform', Edinburgh Review 91, January 1850, p213.

69 F.O.Ward, 'Sanitary Consolidation - Centralization - Local Self-Government', Quarterly Review 8, March 1851, p453.

70 ibid., p448.

71 W.O'Brien, 'Supply of Water to the Metropolis', p399.

These arguments were less relevant in Sydney where water supply was not privately owned. Moreover the possibility that sewerage would be undertaken privately was equally remote. In many ways the assumption that a sewerage system was the answer to waste disposal problems forced responsibility into the hands of government because of the capital intensive nature of such a system. Sewerage disposal requires a centralised system of pipes which are collectively utilised. Since such a sewerage system is expected, because of its cost, to last many years, repayments which are spread over that time may prevent an investor from getting any quick returns. David Clark notes

> As the experience of N.S.W. railway construction had already shown by this time, private enterprise was unwilling to enter into the provision of overhead capital field unless short-run profits seemed assured and the gestation period of investment was short.[72]

Also the free market system which allocates goods according to who is most able to pay would leave a situation where those areas which suffered the worst sanitary conditions would be the very ones which were neglected. This would be self-defeating in that diseases would continue to breed in these areas and not only would the city still be vulnerable to epidemics but the fear of crime, immorality and rebellion would remain.

Perhaps more importantly, private companies are only able to consider direct costs and benefits in their profit statements and yet most of the benefits of a sewerage system are indirect. The main benefit is a decrease in disease which can be measured in economic terms and indeed was considered in this way at the time but such a benefit was available to everyone and could not be charged to individuals.

The question of government intervention therefore was less contentious in Sydney where there was no impinging on areas of private business and where its situation within a colony made arguments about self-determination less meaningful. Moreover the property owning citizens of Sydney had shown themselves quite indifferent to local self-government. Nonetheless, the suggestion, in 1852, that a Board of Works be established to construct sewerage and water works was objected to on the grounds that power would be placed in the government's hands which belonged with local representatives.[73]

Centralisation was also not such a pressing issue in the new colony as it was in Britain where various well-established towns competed with each other for prominence. N.S.W. was already a fairly centralised colony and Sydney had only recently begun to spread out from its central city district with suburban centres just beginning to form. Nonetheless, as those suburban councils formed they jealously guarded what autonomy they had and fought for a say in metropolitan affairs.

Although this may sound like a genuine attempt to retain democratic control, it should be noted that local government franchise in the colony was extremely restricted and combined with a "property-based system of plural voting, linked with special property qualifications and absence of payment for municipal office".

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72 David Clark, 'Worse Than Psychic', p59.

73 Sydney Morning Herald, 8th June, 1853.

It meant that local government was controlled by wealthy men[74] rather than enabling grass-roots local self-determination.

The idea of the Colonial government gaining control of water and sewerage supply was opposed by both the supporters of municipal government and the critics of the Colonial government who did not want to see its powers extended.[75] Also the British distrust of centralised government intervention in local affairs continued to be voiced in N.S.W. throughout the nineteenth century.[76] Municipal control of water and sewerage was maintained from the reinstatement of the City Council in 1857 till 1888 despite constant criticism and fault-finding as well as allegations of corruption in the City Council. The performance of the City Council in laying sewers was extremely slow and continued to be dogged by a lack of finance. A defect in the legislation meant that they could not even enforce the payment of sewerage rates and this led to an enormous backlog of unpaid accounts.[77] No sewers were constructed by the Council after 1861 for these reasons.[78]

In 1875 fears of an epidemic reached crisis point and amidst the panic a temporary Board was set up to inquire into the sanitary state of the city. This board, the Sydney City and Suburban Sewage and Health Board, was made up of M.P.'s and government officials and only one representative from the City Council - the City Engineer.[79] The Sewage and Health Board renewed arguments for a permanent sanitary authority, which would operate "without fear or favour" to eliminate all sources of nuisance and public health threats and keep the issue constantly before the public.[80]

The Sewage and Health Board emphasised the importance of making such an authority permanent and independent.[81] This body, they argued, should have tenured members who would not be directly subject to popular control. It was feared that any body which feared unpopularity would not apply sanitary laws stringently.[82]

The Sewage and Health Board were supported by a Health Society deputation to the Premier in 1878 which argued that aldermen on local councils represented vested interests rather than an impartial sanitary administration. Aldermen owned unwholesome buildings and disobeyed laws banning animal slaughter in the City.[83] A further argument for a centralised board was put forward by a

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74 Mayne, Fever, Squalor and Vice, pp42-43.

75 Clark, 'Worse Than Psychic', p59.

76 Mayne, Fever, Squalor and Vice, p48.

77 Greta Gerathy, 'Sydney Municipality in the 1880s', Journal of the Royal Australian Historical Society 58(1), March 1972, p36.

78 F.A.Larcombe, The Stabilization of Local Government in New South Wales 1858-1906, Sydney University Press, 1976, p90.

79 Mayne, Fever, Squalor and Vice, p39.

80 The Sydney City and Suburban Sewage and Health Board, Seventh Progress Report, 1875, p3.

81 The Sydney City and Suburban Sewage and Health Board, Nineth Progress Report, 1876, p4.

82 The Sydney City and Suburban Sewage and Health Board, Eleventh Progress Report, 1876, p4 and Twelfth and Final Report, 1877, p8.

83 Mayne, Fever, Squalor and Vice, p45.

doctor at the Royal Society of N.S.W. in 1886. F.H.Quaife argued that since drainage should follow the geographical terrain rather than artificial borough boundaries it was difficult for the various municipalities to look after their own drainage and make sure that it was integrated with that of neighbouring municipalities. A central board would have the resources to hire specialists and a trained workforce.[84]

The city council's lack of performance in both sewerage and water supply had also led to much agitation for an entirely new controlling body. Various attempts were made in the N.S.W. parliament to enact legislation for such a body and finally in 1888 a board was established to control and manage the water supply and sewerage works in the city or municipalities within the County of Cumberland which were existing or under construction by the government at the time. The construction of all major works remained the province of the Public Works Department until 1925 and these works were transferred to the Board upon completion. The Metropolitan Board of Water Supply and Sewerage had quite limited powers during this time being little more than a government department with its finances closely controlled by the government.[85]

The Board was constituted in 1888 with three "official members" appointed by the Governor, one of whom would be President of the Board. A further two members were elected by the City Council and two others were elected by the Mayors and Aldermen of several boroughs and municipal districts. A candidate had to be eligible for election to one of the constituent councils and therefore be a property owner.[86]

The compromise between elective and nominee members inherent in this constitution was nevertheless contentious.[87] Even after five years of operation the degree of government control versus direct control by ratepayers was an issue. In 1893 the custom of appointing civil servants already in the employ of the government to the three governor-appointed positions, including the post of President, was attacked in parliament. The grounds for attack were that this ensured that the President and his two co-appointees were not independent and free from ministerial control as had been envisaged in the original act.

> The rate-payers say they cannot expect to get a full consideration of their rights when there is so great a civil service and Government influence on the board.[88]

It was pointed out that the duty of the Water and Sewerage Board was to "exercise economy in expenditure so that the ratepayer may have to pay the lowest possible amount of rates"[89] and it was argued that a more democratically

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84 F.H.Quaife, `Notes on the Sanitary Condition of the Eastern Suburbs,etc', Proceedings of the Royal Society of NSW 20, 1886, pp352-3.

85 Larcombe, The Stabilization of Local Government in New South Wales, pp94-102; Henry, The Water Supply and Sewerage of Sydney, pp2-3.

86 ibid., p4.

87 Metropolitan Water and Sewerage Bill, Legislative Council, 5 May 1880, pp2159-2166.

88 Carruthers, Member for Canterbury, Metropolitan Water and Sewerage Act Amendment Bill, Legislative Assembly, 9 March 1893, p5037.

89 V. Parkes, Member for East Sydney, Metropolitan Water and Sewerage Act Amendment Bill, Legislative Assembly, 20th April 1893, p6284.

constituted Board, that is one with all members elected representatives of ratepayers, would be a more economic one.[90] Similarly those who argued for the retention of government control argued that the Parliament should be able to control the expenditure of the Board.[91]

THE PRICE OF POOR PUBLIC HEALTH

The opposition to public health spending in the nineteenth century was such that sanitary reformers attempted to justify water, sewerage and drainage schemes on economic grounds. The economics of public ill-health were first debated in Britain. Chadwick's report, as noted before, emerged out of the debate over whether the cost of public health measures would save money in poor relief and Chadwick devotes a chapter to the subject titled 'Pecuniary Burdens Created By the Neglect of Sanitary Measures.' In it Chadwick enumerates the costs as including the cost of reduced production when workers are sick, weak or live short lives, the cost of caring for and maintaining the sick, the costs of vice and crime and the cost of destitution. He points out that the death of a male breadwinner can create widows and orphans causing "a source of a constant influx of the independent into the pauperised and permanently dependent classes" and also causing the mean age of the population to be very low.[92]

Similar points were made in British newspapers and periodicals such as the Edinburgh Review.

> We all know that, in the economic sense of the term, a short-lived population is generally a surplus population, -not only because those who are reckless of preserving life will be careless of all its obligations, and will be poor and vicious, but because the tendency of early deaths is chiefly, to shorten the existence of those who produce more than they consume, and to increase the number of those who must be dependent on the charity of others.[93]

The Sydney Morning Herald, the following year, warned that if a fatal disease were to break out "amongst the dense masses of our capital" it would spread throughout the land bringing personal suffering and industrial ruin.

> It would be a species of taxation more grinding and oppressive than any which human laws can impose--taxation which none could resist or evade.[94]

This same argument was put forward in one form or another in most of the nineteenth century reports proposing sewerage systems. For example W. Clark, in his 1877 report goes to some trouble to include mortality statistics and, in the

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90 Jeanneret, Member for Carcoar, Metropolitan Water and Sewerage Act Amendment Bill, Legislative Assembly, 20th April 1893, p6289.

91 McCourt, Member for Camden and Dowel, Member for Tamworth, Metropolitan Water and Sewerage Act Amendment Bill, Legislative Assembly, 20th April 1893, pp6289, 6291.

92 Chadwick, The Sanitary Condition of the Labouring Population of Britain, pp254-5.

93 J.Hill Burton, 'Sanitary Reform', p212.

94 Sydney Morning Herald, 6th November 1850.

appendix even includes a calculation made in Madras of the monetary loss to the community of death and sickness. He says

> For every death there are twenty-eight cases of preventable sickness, which incapacitate the sufferer for active employment for many weeks, entailing pecuniary loss, which when estimated in money is an amount calculated to startle the strongest and should induce a willingness to contribute to the cost of remedial measures. [95]

Sanitary reformers recognised that their main opposition came from landlords and pointed to the indirect benefits a landlord would receive in return for the extra rates that would need to be charged to supply sewerage and drainage. Chadwick, for example, includes the preservation of the property, the ability to get better tenants who can pay higher rents more regularly and the general improvement in rents that would be available if the population was not constantly sick and dying.[96] Similarly the British periodicals pointed out that for half the public money spent on poor relief, "sickly, degraded inmates" of fever nests could be transformed into a "healthy, self-supporting population" that paid its rents regularly.[97]

Another economic benefit of sewerage systems was the savings to be made in not having to empty out cesspools[98] but this was of no interest to landlords nor governments since it was generally a cost paid by the tenant.

CONCLUSION - COMPELLING COSTS AND GOVERNMENT CONTROL

Whilst a concern for public health may have been a contributing factor in the decision of the colonial government that the municipal council should provide for waste disposal, other factors are more relevant. After all it was the poor who suffered most from insanitary conditions and they had no formal say in the affairs of government. A more pressing concern in the eyes of the middle classes was not the suffering of the poor but the consequences to themselves of dirt and disease in the slums.

These consequences were considered in economic and moral terms. The economic costs were considered to stem from the lost productivity, lost rents, stolen and vandalised property and the price of charity. But insanitary conditions were also perceived to have posed a threat to the stability of the society, threatened the status quo and made the well off uncomfortable in their affluence. Also the middle classes feared epidemic diseases that might spread out from the slums.

> the sanitary movement helped initiate a value change, convincing many urbanites that filth was not a nuisance to be tolerated but rather a hazard to their health that could be eliminated.[99]

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95 W. Clark, Report to the Government of New South Wales, on the Drainage of the City of Sydney and Suburbs, 1877, p7.

96 Chadwick, The Sanitary Condition of the Labouring Population of Britain, p289.

97 Ward, 'Sanitary Consolidation-Centralization-Local Self-Government', p456.

98 Sydney Morning Herald, 8th March 1851.

99 Tarr et al, 'Water and Wastes', pp256-7

The British debates and the push of the sanitary reformers in Britain made sanitary reform an issue in Sydney in the 1840s and '50s although no epidemics had been experienced in Sydney at this time. The same arguments about the consequences of insanitary conditions which were current in Britain were put forward by the newspapers, politicians and professional people in Sydney. But whilst arguments for sanitary reform were borrowed from Britain so were arguments against it, particularly those based on *laissez-faire* principles which attempted to keep public spending and government intervention to a minimum.

The ideological arguments for keeping public spending to a minimum were reinforced by the very real reluctance of ratepayers and landlords to contribute to the cost of sanitary measures such as sewerage systems which provided no direct benefit to business profits and which were of most benefit to the non-rate-paying urban tenants. Such opposition continually impeded the implementation of measures that had been approved and even demanded and ensured that they were done in the cheapest possible manner.

The power and influence of reluctant ratepayers ensured that economic arguments were always put forward to justify sewerage spending and were perhaps the most important in persuading businessmen, but the motivation of a good many of the sanitary reformers seems more likely to have been one associated with social control. The goal of the government in pushing for public control of waste disposal was to minimise the social and economic disruption caused by pollution at the least cost to the ratepayers.

We can now begin to locate schemes for sewage collection and removal within this political, economic and ideological context. In the next chapter, the decision to install sewers and the competition of water-carriage technology with dry conservancy technologies will be examined.