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PUBLIC HEALTH ISSUES IN QUEENSLAND, 1901-1905

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As early as 1861, vital statistics collected by the Queensland Registrar-General identified what were to be the major public health issues in the colony for the remainder of the nineteenth century. These were poor sanitation and high mortality, especially in young children, associated with infectious diseases. A Central Board of Health set up in 1865 called for legislation to deal with these issues. But the government gave health problems a low priority and Queensland's first *Health Act* was not passed until 1872, with amendments being made in 1884. When bubonic plague appeared in Queensland in 1900, the inadequacies of this legislation and the absence of a central authority to deal with the epidemic were realised. A comprehensive *Health Act* was passed in 1900. This was associated with the appointment of Queensland's first Commissioner of Public Health, empowered to deal with plague, infectious diseases, sanitation, food adulteration and child life protection. With the appointment of the Commissioner, Dr B. Burnett Ham, important steps were taken to tackle these issues during the years 1901 to 1905. □ *Public health, sanitation, plague, food adulteration, disease notification, infant life protection.*

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On 10 December 1859, Queensland was proclaimed a colony separate from New South Wales. In 1861, in his first annual report, Queensland's Registrar-General, F.O. Darvall, predicted what were to be major health problems in the colony for the remainder of the nineteenth century. He noted the high childhood mortality from infectious disease and stressed the need for sanitary reform.¹ In the following years, Darvall's fears were to become a reality for, as the population increased, the death rates rose alarmingly, mostly in the young. It was realised that the deaths were associated with infectious gastrointestinal diseases largely due to poor sanitation and unsuitable food.

In 1865, the first Central Board of Health, an advisory body, was set up to inquire into the sanitary conditions in the larger towns of Queensland.² The Board recommended schemes to reduce water pollution and to introduce health legislation. Although some improvements in sanitation were made in an *ad hoc* fashion by the Brisbane City Council, there was little interest on the part of the colonial government in such issues. Hence, it was not until 1872 that Queensland had its first health legislation, the *Health Act* of 1872.³ It soon became obvious that the Act did not provide for sanitary improvements, and the government was goaded into passing its second *Health Act* of 1884. The adequacy of this Act was to be put to the test by the threat of bubonic plague

reaching Australia, following the outbreak of a pandemic in China in 1894.

Following the report in Sydney of the first proven case of plague in Australia on 19 January 1900,⁴ there was concern that plague would soon reach Brisbane, just thirty-six sailing hours to the north. With the appearance of plague in Queensland in April 1900, a state of confusion and panic ensued with attempts to control the disease (Fig. 1). Subsequent to the recommendation by the Central Board of Health, an Order-in-Council provided for the establishment in Queensland of Joint Epidemic Boards of Health for the Prevention of Epidemic Diseases and encouraged authorities to act cooperatively on health matters. In Brisbane, twenty local authorities within twenty kilometres of the General Post Office were represented on the Metropolitan Joint Board of Health for the Prevention of Epidemic Diseases. By 4 July 1900, there had been sixty-one cases of plague reported in Queensland, with thirty deaths. It soon became clear that, under the provisions of the 1884 *Health Act*, the Central Board had no jurisdiction over the Joint Epidemic Boards. As a result of acrimonious differences between the Metropolitan Joint Board and the Central Board, a plea was made for a single health authority.

On 26 July 1900, a new Health Bill was read for the first time.⁵ At the second reading on 17 October, the Home Secretary, the Hon. J.G. Foxtton, announced the appointment of a



FIG. 1. Newspaper cartoon depicting the chaotic public health infrastructure when plague struck Brisbane. (*The Worker*, 12 May 1900)

Commissioner of Public Health, Dr Bertie Burnett Ham, a medical practitioner who had received training and experience in sanitary sciences in England and had published an important textbook on the subject.⁶ Assent for the *Health Act* of 1900 was received on 20 November 1900. The new Act was a well framed and enlightened piece of legislation, providing for a central authority to give leadership and coordination and encouraging participation by local authorities. It was the most comprehensive health legislation ever witnessed in Queensland.

Dr Ham (Fig. 2) took up his position on 1 January 1901, the day the new *Health Act* came into force and Queensland's Department of Health came into being.⁷ Under the Act, Ham was to set up a central health authority and to address the enormous problems of sanitation, to deal with plague, and other infectious diseases. He was also required to supervise the quality and sale of drugs and food, including milk, institute a system of disease notification and ensure the protection of infant life.

SANITATION AND PLAGUE

The most pressing medical problem Dr Ham had to deal with was plague and other infectious diseases, which required an improvement in sanitation. To do this, he needed the cooperation of local health

authorities who were often incapable, or unwilling, to take part in the big clean up throughout the state. He also had financial constraints. The budget allocated in 1901-02 to combat plague was £6,758 out of a total health budget of £133,000, representing only three per cent of the total state budget of about £4 million.⁸ In addition to the apathy of some local authorities in dealing with the plague, there were still some doubts in the community that the disease was actually plague. Many dismissed the malady as 'simple typhoid with other complications'. Brisbane's leading demagogue of denial was Dr Thomas Lucas, a South Brisbane general practitioner, who insisted that 'true Asiatic plague' had not reached Australian shores. Lucas soon gained quite a popular following. A lecture he delivered in July 1900, at the Protestant Hall in Ann Street, packed the building to overflowing, with hundreds of people unable to gain admission. Lucas kept up his campaign of denial throughout the period of the 1900 epidemic and beyond, no doubt adding difficulties for Ham in instituting his plague regulations.⁹

Dr Ham set about dealing with the disease along several fronts. Through his personal advocacy and with the help of his medical officers, sanitary inspectors, rat gangs and disinfectors, he offered advice and assistance to the local authorities who had the task of enforcing his plague regulations. These regulations made provision for the surveillance of vessels arriving in Queensland; for the destruction of rats (Figs 3 & 4); for the management of confirmed and



FIG. 2. Dr Bertie Burnett Ham, Queensland's first Commissioner of Public Health. (LaTrobe Collection, State Library of Victoria)

TABLE 1. Reported cases of plague, Queensland, 1900-09. (Source: J.H.L. Cumpston & F. McCallum, *The History of Plague in Australia, 1900-1925* (Melbourne: Government Printer, 1926), p. 29)

	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
Cases	136	36	91	29	35	56	32	53	29	2
Deaths	57	12	33	17	12	33	12	25	16	2

suspected cases; the management of isolation hospitals; and the disposal of the dead. The body of a patient who had died from plague was wrapped in a sheet soaked in barbotic acid and then placed in a coffin containing slaked lime. The burial took place in an area not likely to be disturbed or used again.¹⁰ To assist in the proper execution of the regulations, a Health Officer, acting as deputy for the Commissioner, was appointed in each of the major towns and ports of the State. Ham brought the local authorities into line and insisted on regular and detailed reports from them. When in 1902 he encountered the apathy and indifference of the Metropolitan Joint Board in dealing with sanitation issues, he issued an Order-in-Council to clean up the city of Brisbane.¹¹ Under the Order, 'the city was thoroughly cleaned ... and some 2,330 loads of filth removed and taken out to sea, in addition to a large quantity destroyed by fire'.¹²

Dr Ham's carefully researched *Report on Plague in Queensland 1900-1907*¹³ received world-wide acceptance in adding to the knowledge of the epidemiology of the disease.¹⁴ At a time when the role of the flea in transmitting plague to humans was being evaluated, Ham made several important observations. He showed that plague-infected fleas, after leaving their dead host-rat, could survive in food produce. He also found that flea activity increased with suitable environmental conditions and that meteorological variations had a seasonal effect on the survival, growth and virulence of the bacterial flora of the flea, including the plague organism. Active operations against rats, attention to defective drainage and sewers, aided by public campaigns directed at an apathetic public in the early 1900s, gradually reduced the morbidity and mortality from this dreaded disease. By the end of 1905, these initiatives reduced the incidence of plague. For the first time in a decade, no cases of plague occurred in Queensland after 1909 for twelve years (Table 1).

THE ADULTERATION OF FOOD

The *Sale of Foods and Drugs Act* of 1881 was succeeded by the *Health Act* of 1900 and its provisions were incorporated into the new Act.

Food standards were so important, in Dr Ham's view, that his first major report to Parliament in 1901 dealt with 'the whole question of preservatives used in food, and the adulteration and unwholesome foods manufactured in Queensland'.¹⁵ He had been requested to prepare this report after J. Brownlie Henderson, the government analyst, had found that the specific gravity of the beers and stouts retailed in Brisbane was much below the standard of good English ale and stout.¹⁶ Most of Ham's report on foods dealt with whether food for sale should contain preservatives of any kind. The preservatives under debate were formaldehyde and boric, salicylic and benzoic acids. Having recently arrived from England, the commissioner was aware that a royal commission in that country was examining the question. He, therefore, recommended that a decision be deferred until the report of the English inquiry was published. When the report became available, Queensland was the first state in Australia to frame regulations based on its recommendations. Standards for foodstuffs were fixed, the amount of preservative (if any allowed) stated and injurious ingredients declared.¹⁷ Ham was full of praise for Henderson, the analyst, for his sustained and untiring efforts to secure a wholesome food and drink supply for the community of this state.¹⁸



FIG. 3. Cartoon showing 'Major-General Rat' preparing an assault on Brisbane with the arrival of plague. (*The Worker*, 14 April 1900)



FIG. 4. Thousands of rats were destroyed in Brisbane during the plague epidemic of 1900-09. The city had 318 of the 499 plague cases recorded in Queensland. (John Oxley Library, Brisbane, neg. no. 108588)

A spate of food poisoning in 1903 gave impetus to improving the condition of food consumed by the public. On 5 January that year, a child was admitted to the Hospital for Sick Children Brisbane with food poisoning.¹⁹ The child died and another member of the child's family was reported two days later to be in a critical condition with the same disease.²⁰ Dr Ham was concerned about the alleged food poisoning and issued a full report in the press on the causes of food poisoning together with his recommendations.²¹ The next day, two more cases of food poisoning in a mother and daughter were reported in Brisbane. They had been taken ill after eating corned beef.²² A newspaper campaign called for reform in the adulteration of food, especially milk,²³ and it was followed by a magisterial enquiry into the deaths from food poisoning. In early February 1903, another case of fatal food poisoning was reported in a two year old in Brisbane.²⁴

Concern over the number of cases of food poisoning in Brisbane was expressed by the Queensland Branch of the British Medical Association in its invitation to Dr Ham to read a paper on the subject. Ham agreed, as the subject was one of importance to both health authorities and the medical profession. He presented a clear view of current knowledge, providing medical information on the classification and composition of ptomaines, which caused the food

poisoning, their nature and products of their putrefaction, the important part played by micro-organisms, diagnosis and clinical features, and the public health aspects.²⁵ He stated that he had made a report to the State Government on the outbreak of alleged food poisoning,²⁶ warning butchers and other food processors against the use of stale 'pickle', brass and dirty injection needles in the preparation of corned and other meats. His report also showed how various foodstuffs became poisonous in the course of their storage, preparation and disposal; the influence of sanitary surroundings upon food; the methods of preparation; the sources of contamination; and the preventive measures and sanitary regulations to be enforced in the manufacture and sale of food preparations.

The food which caused most concern was milk. An attempt to address the issue of preservatives in milk and other foods was made in the amended *Food and Drug Regulations* of 1903.²⁷ The quality of milk improved as a result of the *Dairy Produce Act* of 1904, urged by Dr Ham, but it was still not completely satisfactory in 1907 as Ham continued to call for refinements in milk production.

NOTIFICATION OF EPIDEMIC DISEASES

By the end of the nineteenth century, the term 'infectious disease' was applied to those diseases which were transmissible from one human to

another and which were due to the growth and multiplication of micro-organisms within the body, introduced from the outside. There had been calls for the compulsory notification of infectious diseases in all the Australian colonies at the Australasian Sanitary Conference in 1884²⁸ and, specifically for Queensland, by the Queensland Branch of the British Medical Association in 1896.²⁹ However, notification did not become compulsory in Queensland until 1900, under Part 7 of the *Health Act* of 1900. Under the Act, specified infectious diseases were regarded as notifiable for administrative purposes. They were: plague, cholera, smallpox, scarlet fever, diphtheria, membranous croup, erysipelas, and fevers known under the names of typhus, typhoid, enteric, relapsing, continued or puerperal fever. As part of the need to collect and disseminate knowledge about epidemic diseases, Dr Ham instituted a procedure for the compulsory 'Notification of Diseases'. This system, with additions and deletions as diseases changed, continues to the present day, and has played an important role in the control of infectious diseases in the state. In addition to making the common infectious diseases notifiable, Ham played a major role in working with the medical profession in securing the notification of tuberculosis in 1904, making Queensland one of the earliest states to make such a move.

INFANT LIFE PROTECTION

During the late nineteenth century in Queensland, the Infant Mortality Rate (the number of deaths in the first year of life per 1,000 live births) was higher in illegitimate infants. The *Health Act* of 1900 brought no immediate improvement in the care or death rate of infants looked after by 'baby farmers', who were often entrusted with the care of illegitimate infants. With help from the police, Dr Ham investigated the abnormal number of deaths 'in certain quarters', as it was believed that 'baby farming' was extensive in Brisbane. His plan was that South Brisbane, where most of the 'farming' occurred, would be brought under strict surveillance, but this met with little success.³⁰ By 1902, two years after the *Health Act* was passed, 11.2 per cent of legitimate infants died within the first year of life, compared with 29.3 per cent of those born illegitimately during the same period.³¹ The main difficulty lay in persuading local authorities to cooperate; the medical officers of health, who had to enforce the Act's

provisions, claimed that protection of infant life was not one of their duties.³²

Soon Dr Ham realised that not only did 'baby farming' need to be controlled, but also 'clean milk' had to be provided for infant feeding. Under Part 6 (ss 90-116) of the *Health Act* of 1900, comprehensive provisions were made for the inspection of food, including milk and bread, and drugs. Analyses carried out by his Department showed that milk was being adulterated with water and that formalin and other preservatives were being used in many chemist's shops to keep dairy produce 'sweet'. He concluded that the best way to keep milk fresh was to use pasteurisation, sterilisation, refrigeration and chilling. Ham called for legislation for the better control of dairies and for regulating milk supply. At that time dairies came under Part 3 of the *Health Act Amendment Act* of 1886. Local authority by-laws were totally inadequate for the registration, cleansing, disinfection and water supply of dairies, as well as for the hygiene of milk receiving utensils. A model by-law and regulations were drafted by Dr Ham in 1902, but he was advised by the Department of Justice that they could only be used as suggestions under current legislation.³³

Pressure for the improvement of milk supplies for feeding infants and the protection of infant life gained momentum in 1904-05. Articles on infant mortality were published by medical practitioners in the medical press³⁴ and the newspapers.³⁵ The Queensland Branch of the British Medical Association added its weight to the campaign in November 1904 by sending a deputation to the Minister for Agriculture, led by Dr William Byrne, a prominent Brisbane medical practitioner. The group persuaded the Home Secretary to communicate its views to Parliament.³⁶ Other medical delegations pressed the Home Secretary for a better infant life protection legislation.³⁷ Newspaper editorials deprecated the evils of 'baby farming'.³⁸ The pressure increased when considerable publicity was given to an inquiry into the death, in the care of a 'baby farmer', of an infant who was certified at post-mortem to be suffering from malnutrition.³⁹ Dr Ham considered that the provisions of the *Health Act* were totally inadequate to ensure the proper feeding, protection and care of infants.⁴⁰

Under the pressure of strong criticism from the Society for the Prevention of Cruelty⁴¹ and the press, a Bill was introduced 'to make better provision for the protection of infants, and for

other purposes'.⁴² An amendment to vest authority for administering the Bill in the Commissioner of Public Health was not accepted.⁴³ The *Infant Life Protection Act* of 1905⁴⁴ finally came into force on 1 January 1906.⁴⁵ Although it did not solve the whole problem of infant mortality, at least it attempted to reduce the high death rate among artificially fed, farmed out, illegitimate babies, taking the matter out of the hands of local authorities and making it the direct responsibility of the Commissioner of Police.

CONCLUSION

Prior to the passing of the *Health Act* of 1900, matters of public health in Queensland had been dealt with in an *ad hoc* manner without effective direction. Attempts were made to solve each problem as it arose, and then they lay dormant until the next crisis. The occurrence of bubonic plague in 1900 was not a complete disaster. It resulted in governments, the medical profession and citizens being confronted with the appalling sanitary conditions existing in the colony. Also, it highlighted the lack of a central administration to deal with such a crisis. The government was goaded into drafting legislation and Queensland's first comprehensive legislation, the *Health Act* of 1900, was passed. This Act required that its administration be under a Commissioner of Public Health who should be a medical practitioner experienced in sanitary science. The right man was chosen at the right time when Dr B. Burnett Ham was appointed on 1 January 1901. During the early years of his office, from 1901 to 1909, Ham showed tenacity and courage in introducing important public health measures, many of which are still in place today.

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